OVERCOMING IMPEDIMENTS TO YOUTHS PARTICIPATING IN HUNTING: PROGRAM IMPLEMENTATION AND OUTCOME EVALUATIONS

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Prepared by:

Jody W. Enck, George F. Mattfeld, Heidi J. Christoffel, and Daniel J. Decker
Human Dimensions Research Unit
Department of Natural Resources
Cornell University
Ithaca, NY. 14853-3001
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JOB OBJECTIVES: (1) Assist DEC through program design and formative evaluation activities.

(2) Evaluate the implementation and adoption of the program.

(3) Evaluate the extent to which the program overcomes impediments to hunting encountered by potential participants.

JOB DURATION: 1 April 1988 - 31 March 1996.

PREPARED BY: Jody W. Enck
Research Associate
Department of Natural Resources
Cornell University

Daniel J. Decker
Associate Professor
Department of Natural Resources
Cornell University

APPROVED BY: George F. Mattfeld
Biologist 2 (Wildlife)
Bureau of Wildlife (NYSDEC)

Gary R. Parsons
Biologist 4 (Wildlife)
Bureau of Wildlife (NYSDEC)
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Literally hundreds of persons contributed information for the formative evaluation of New York's Apprentice Hunter Program (AHP). Numerous persons previously or currently associated with the New York State Department of Environmental Conservation (NYSDEC) especially were instrumental in guiding the evaluation. In addition to co-author George Mattfeld, these included Jim Beemer, Glen Cole, Patty Finn, Judy Ford, Ned Holmes, Bill Jacobs, Wayne Jones, Eric Kasza, Al Marsters, Larry Myers, Dick Nash, and Gary Parsons. Many volunteers associated with NYSDEC programs also provided great amounts of support during the evaluation. Of special note were Bill Geiger and Al Soos.

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Evaluation of the AHP would not have been possible without the assistance of the scores of volunteer mentors, participating apprentices, and apprentices' family members. Their assistance helped address important questions about the future of hunting in New York.

We also are indebted to the many sportsmen and sportswomen of New York who provided insights to the development, implementation, and evaluation of the Apprentice Hunter Program. Hundreds of individuals from dozens of organizations contributed abundant personal energy to implementation and evaluation efforts. These persons are too numerous to list here.
EXECUTIVE SUMMARY

INTRODUCTION

Hunting participation in New York declined significantly during the early 1980s. Research conducted by the Human Dimensions Research Unit (HDRU) in the Department of Natural Resources at Cornell University during the late 1970s to mid-1980s related this decline to lack of (a) apprenticeship experiences and (b) social support for hunting by many persons who were interested in hunting. Many persons lacking these key influences on participation were not able to build on their interest and either ceased hunting after trying it for a brief time or never started.

In the late 1980s, the New York State Department of Environmental Conservation (NYSDEC) initiated planning and design for a program for youths who were interested in hunting but who lacked apprenticeship and social support. This program became the Apprentice Hunter Program (AHP), which was piloted in 2 areas of the state—southeastern New York (NYSDEC Region 3) and west-central New York (NYSDEC Region 8). The basic program design matched interested youths 1-on-1 with trained mentors who were to provide the youths with apprenticeship experiences and help build networks of positive social support. HDRU staff have worked with NYSDEC staff since 1988 to evaluate the program. Our evaluation strategy has had 4 stages:

(1) Theory application evaluation—process of examining whether the AHP was based on an appropriate model developed from theories and empirical evidence for the specific context in which the AHP was to be conducted. This stage was completed earlier and was described in Enck et al. (1988).

(2) Program design evaluation—process of examining the proposed program design prior to implementation to determine if the design adhered to the conceptual model. This stage was completed earlier and was described in Enck and Decker (1990).

(3) Program implementation evaluation—process of systematically monitoring the AHP as it was put into effect. Initial evaluation findings were described...
in Enck and Brown (1992) and Enck (1993). Additional implementation evaluation efforts are described in this report.

(4) Program outcome evaluation - process of determining the impacts of the AHP and reasons for success or failure. Initial results of this stage were reported in Enck et al. (1996). A complete description of program impacts are presented in this report.

This report is the last in the series of evaluation reports associated with the AHP. Specific objectives were to:

(1) assess the degree to which implementation stages described in the planning document (NYSDEC 1990) were followed,
(2) document and evaluate changes in planned implementation activities undertaken to enhance program success,
(3) assess the outcomes of the AHP on youths who participated in it, and
(4) assess the degree to which the AHP could be operationalized programmatically and consistently.

PROGRAM IMPLEMENTATION EVALUATION

NYSDEC’s (1990) planning document for the AHP described 11 stages of implementation. Evaluation of stages 1-3 were addressed in Enck and Brown (1992). Initial findings from stages 4-11 were reported in Enck (1993). Additional evaluation findings pertaining to stages 4-11 are presented in this report.

Implementation Stage 4: Recruiting and Selecting Mentors

- Largest numbers of mentors were recruited through (a) mailings to targeted groups such as turkey hunters and members of the Ruffed Grouse Society, (b) presentations to targeted sportsmen's groups (i.e., those who had requested information and expressed support for the AHP), (c) personal contacts, and (d) news releases.

- Recruitment efforts were most successful in late winter after big game hunting seasons had ended.
• Recruiting adequate numbers of mentors in areas in which most apprentices live remains difficult.

• The effectiveness of using "Coalitions for Youth", which are groups of organizations involved in conservation-related programming for youths, as mechanisms for recruiting mentors in specific areas needs to be more fully evaluated.

• The few wife/husband mentor teams that were tried seemed to be especially effective. Additional wife/husband teams should be recruited and evaluated.

• Post-recruitment background checks of mentors by NYSDEC law enforcement staff are important to (a) reduce the risk of having violators of conservation laws and other legally inappropriate individuals take on mentor roles, and (b) ease concerns of parents of apprentices about the character of mentors who are matched with their children.

Implementation Stage 5: Screening and Selecting Potential Apprentices

• Additional efforts are needed to ensure that all persons who attend SECs complete a screening instrument so those who lack apprenticeship experience and/or social support for hunting are identified as potential apprentices.

• This discrepancy could be overcome by formally linking the AHP screening forms and the SEC exams. Changing the exam format to include an answer sheet similar to the "bubble-type" answer sheet associated with other kinds of standardized tests (e.g., ACT, SAT) would enhance NYSDEC's capability to maintain records of SEC participants, and would enhance identification of potential apprentices.

• The current indicator of prior apprenticeship experience used on the screening instrument seems to be misunderstood by some SEC students. Revision of this indicator would help ensure that youths who meet criteria to participate in the AHP are invited to do so.

• Some potential apprentices do not seem ready to participate in the AHP. The most effective method for assessing youths' readiness is to invite them to participate by telephone and to discuss their level of interest and readiness.

• Inviting potential apprentices by telephone after sending them a written invitation increased participation compared to sending mail invitations only.

• Trained volunteers possibly could help with these calls to allow program leaders to concentrate on other important aspects of the AHP.

• Some evidence exists that a significant number of potential apprentices either do not attend SECs or attend SECs where attendees are not screened. Thus, additional efforts to increase public awareness of the AHP (e.g., through "Coalitions for Youth" or other grassroots methods) may increase the number of potential apprentices who are able to self-select for the program.
Implementation Stage 6: Training Mentors

- Training workshops generally were not successful in helping mentors apply the concepts of apprenticeship and social support.

- Workshops possibly would be enhanced by hiring professional trainers and increasing the duration to at least 1 full day so role-playing and testimonials from experienced mentors could be incorporated.

- Mentors should be trained as soon after they are recruited as possible—preferably during February–April.

- Benefit could be gained by combining AHP mentor training with training for other NYSDEC-sponsored programs, such as the Sportsmen's Education Program and the 4-H Sportfishing & Aquatic Resources Education Program (SAREP). Combining training efforts could increase efficiency and increase awareness and understanding about the various programs.

Implementation Stage 7: Inviting Apprentices

- Telephoning potential apprentices to follow-up on mailed invitations resulted in a higher number of apprentices who agreed to take part in the pilot AHP than only mailing invitations or only calling.

- The youngest potential apprentices, especially, could be reached only from 5:30–8:00 pm on weekdays. Potential apprentices rarely could be reached on weekends.

- Trained volunteers are essential to help with these calls because of the time-intensive nature of extending invitations to hundreds of youths by telephone and the short time period during which calls can be made successfully.

- Most potential apprentices are identified by completing screening instruments at SECs. Currently, most SECs are offered during August–October. If no changes are made in when SECs are offered, most potential apprentices could be identified by December. Letter and telephone invitations then could be extended in January and February while mentor recruitment occurs. That would allow pairs to be matched soon after youths are invited and mentors are recruited and trained. Timely matching is important to prevent potential apprentices and mentors from losing interest in participating.

- Various benefits might result by changing when youths are identified and invited to participate. The central office program coordinator suggested 3 alternatives: (1) maintain the current system of inviting youths to participate as soon as they can be identified—but do this better, (2) offer SECs in July or early August for youths who are most likely to benefit from the AHP, or (3) concentrate on identifying potential apprentices who do not attend or get screened at SECs. Program staff must decide which of these alternatives or combination of alternatives to pursue. Corresponding changes in program implementation then must be enacted.
Implementation Stage 8: Pairing Mentors and Apprentices

- Group pairing meetings are the most efficient and effective method for pairing. These group meetings have an "official feel" to them that is important, especially to apprentices' parents. The meetings provide apprentices with opportunities to start developing social support networks with other youths who are just as unsure about what hunting is all about as they are. Group meetings also can provide opportunities for parents, mentors, and apprentices to "size each other up" and provide input into decisions about who is paired with whom.

- Maintaining participant interest remains difficult because of pairing delays of up to 1 year after mentors are recruited or apprentices are identified. Pairing may be most successful during late winter or early spring, assuming apprentices are invited during January-February and mentors are trained by the end of March.

- Some mentors have the skills and time to be paired with >1 apprentice at a time.

- Effectiveness of pairing mentors with multiple apprentices was evaluated in a very few cases, and seemed to be greatest when a second apprentice was added some months after the original apprentice. This provided the second apprentice with a same-age, slightly more experienced "buddy" with whom the less-experienced youth could talk things over. Interaction between apprentices seemed to enhance their development as hunters because their relationship was based on shared experiences rather than on hierarchical roles of teacher and student.

Implementation Stage 9: Communicating with Mentors

- The most effective mechanisms through which this communication occurs are group events held just prior to or after hunting seasons. These events give mentors a chance to find out from others what experiences seemed "to work" for their apprentices, and to obtain input from program leaders.

- Group events occurring during the hunting season generally are not well-attended, except for AHP-sponsored hunts.

- Newsletter correspondence in particular was ineffective in helping program leaders "keep their fingers on the pulse of what was happening in the field," and provided little opportunity for mentors to become aware of and more fully develop new ideas for interacting with their apprentices.

Implementation Stage 10: Ensuring and Monitoring Subsequent Contacts Between Mentors and Apprentices

- Most youths were provided with apprenticeship experiences such as controlled shooting and practicing firearms handling. However, few were offered opportunities to help plan activities. Nearly all youths had >1
opportunity to see others harvest and clean game or to harvest and clean game themselves.

- Some mentors were successful at developing social support networks of persons who already were important to their apprentices. These networks most often included apprentices' parents and friends. However, many apprentices' parents and other family members did not take an active role in the program.

- By comparison, a greater percentage of mentors involved their own family members and friends in activities. Although involvement by mentors' family members and friends did not meet the intended application of a social support network, some strong friendships grew out of experiences shared by mentors' family/friends and apprentices.

- Overall, mentors believed they established good relationships with their apprentices' and apprentices' parents, and that they were effective mentors. Nonetheless, many mentors seemed unable to provide the kinds of apprenticeship experiences and to develop the social support networks that were hypothesized to be so important in helping youths become long-term participants in hunting.

Implementation Stage II: Ending the Mentoring Process

- Certificates of completion (for apprentices) and appreciation (for mentors) were designed and printed. No formal graduation ceremonies or dinners were held. However, some youth were given certificates of completion during other group activities (e.g., pheasant hunts, summer picnics).

- Lack of an official ending process made it difficult to identify when youths had "completed" the program, and thus complicated data collection and analysis associated with the program outcome evaluation.

Qualitative Assessment of Program Management

Central Office administration and support

- A high degree of Central Office support and oversight existed initially in the southeastern area during program design, but oversight decreased during implementation.

- Relatively little Central Office oversight occurred in the west-central area when the pilot was replicated there.

- General support from the Central Office remained high throughout implementation, but that support had little tangible impact on the accomplishment of day-to-day implementation efforts in the pilot areas. Indeed, several competing ideas about the purpose of the AHP developed in the pilot areas because of the limited Central Office oversight.
Regional administration and support

- In the southeastern area, Regional administrators personally supported the AHP, but generally took a "hands-off" approach to it and considered it to be a relatively low priority compared with other activities.

- Regional administrators in the west-central area took a more active, personal role in supporting implementation of the AHP.

- In both areas implementation suffered from the combination of inexperience by program leaders and slow recognition by administrators of the special administrative needs associated with the AHP (e.g., large copy jobs and mailings, access to offices after hours for telephoning).

Continuity of program leadership

- Lack of continuity of program leadership in the southeast area hindered program success. Five different program leaders were associated with the program from 1988 through 1995. Four of the 5 had limited or no NYSDEC experience, and those 4 were hired as temporary employees. Lack of continuity precluded development of institutional knowledge and experience about what worked with the AHP and what did not.

- Only 1 program leader was associated with the west-central area. However, that person also was hired as a temporary employee, and had no experience in program management.

- The AHP already was underway in the southeast area when the pilot was replicated in the west-central area. The west-central program leader tried to learn about the AHP from the leaders in the southeast area. However, high turnover of leaders in the latter area limited the amount of institutional knowledge and experience available to be used in training. Although several of the program leaders in the southeast area were very capable, their lack of knowledge and experience with both NYSDEC and the AHP resulted in a frustrating situation in which various leaders said they felt like "the blind were leading the blind." The purposeful decision to limit involvement and guidance by Central Office administration exacerbated this problem, and hindered program success.

Work-place constraints

- Program leaders hired as temporary staff were restricted in the number of hours they could work in a week and in their access to NYSDEC facilities for evening and weekend telephone calling. Access to copiers and postage meters often was limited as general policy. For the first year or two in particular, little secretarial support existed. These kinds of problems tended to be more severe in the west-central area than in the southeast area.
Liaison between AHP and SEC programs

- Liaison between the 2 programs generally was inadequate to ensure necessary coordination and support.

- Several factors contributed to poor liaison between the 2 programs: (a) temporary staff status of both AHP and SEC program leaders in the pilot areas, (b) AHP leaders' relative inexperience at program management, (c) turnover among SEC leaders in the southeastern area, and (d) limited communication and support from Central Office and Regional administrators which was needed to help SEC leaders staff better understand the experimental nature of the AHP.

Use of program volunteers

- A few key volunteers stepped forward in both pilot areas and greatly enhanced opportunities for program success. However, program leaders generally directed little effort at soliciting and using volunteers.

- Potential volunteers generally had limited understanding about the AHP and lacked information about what volunteer roles were available.

- Ironically, program leaders were so busy with implementation responsibilities that they believed they had little time to solicit and train volunteers who could have accomplished many of those responsibilities.

Qualitative Assessment of the AHP by Mentors and Apprentices

- Apprentices said the best aspects of the program pertained to: (a) being able to take advantage of opportunities they simply would not have had otherwise (e.g., to learn about hunting from persons who had more hunting experience than anyone else they knew, to hone hunting skills, and to learn more about hunting safely), (b) enjoying opportunities to meet new people, (c) having fun with their mentors, (d) spending time outdoors, and (e) learning to respect nature.

- Negative aspects identified by apprentices included: (a) unmet desires for more hunting time (i.e., they or their mentors were too busy, or their family members could not accompany them to meet legal requirements), (b) having trouble contacting their mentors regularly, and (c) being paired with mentors who lived too far away or with whom they did not relate well.

- Mentors said the best aspects of the program pertained to: (a) hunting with their apprentices, (b) feeling proud that their apprentices grew or matured as hunters during their participation in the program, (c) passing along to their apprentices some amount of hunting experience, skill, and knowledge, (d) believing they had played an important role in "making sure that the tradition of hunting will continue," and (e) being proud to have "done their duty" by personally ensuring their apprentices bought hunting licenses.
• Negative aspects identified by mentors included: (a) perceived inadequacy of mentor training, (b) unfulfilled expectations about the kinds of assistance program leaders would or could provide, (c) too few group activities to build a sense of program identity, (d) being paired with "uncooperative" or "immature" apprentices, (e) difficulty finding a place to target practice or hunt, (f) difficulty locating equipment for youths to use, (g) lack of time by apprentices to hunt or get together with mentors, and (h) lack of time by parents of the youngest apprentices (12-13 year-olds) to meet the legal requirement of going hunting with the youths and their mentors.

PROGRAM OUTCOME EVALUATION

Program outcome evaluation was assessed by comparing data from 3 groups of youths in both pilot areas.

A treatment group (n = 47) included youths who had been paired with a mentor for ≥1 year.

A control group included a sample of 27 youths from each pilot area (total n = 54) who could have benefitted from participation in the AHP (i.e., met the invitation criteria), but who were not paired with a mentor.

A comparison group included a sample of 27 youths in each pilot area (total n = 54) who were likely to become and continue to be hunters without participating in the AHP (i.e., did not meet the invitation criteria).

Data were collected via telephone interviews and relate, in part, to NYSDEC's decision about expanding the AHP statewide. Six decision criteria were established by the team who developed the program plan (NYSDEC 1990:9–10). These criteria pertained to (1) license-buying behavior of the youths, (2) stage of hunting involvement, (3) mean number of days spent hunting, (4) program cost, (5) degree to which mentors successfully applied desired program elements, and (6) willingness of mentors to be paired again. According to the
planning document (NYSDEC 1990:9), "the sum of the 6 must be positive for the AHP to be expanded statewide."

(1) License-buying Behavior

- Outcome of this decision criterion was mixed.
  - Youths in treatment groups did not purchase a license to hunt with any greater consistency than youths in control groups.
  - Youths in the southeast treatment group bought licenses with less consistency than youths in the southeast comparison group, but youths in the west-central treatment group bought licenses as consistently as youths in the west-central comparison group.
  - Youths in control groups were less consistent license buyers than youths in comparison groups.

(2) Stage of Hunting Involvement

- Outcome of this decision criterion was mixed, with greater success experienced in the southeastern area.
  - About 56% of youths in the treatment group in the southeastern area moved into the continuation stage of involvement after at least 1 year in the AHP, but only about 11% of youths in the west-central treatment group did so.
  - Youths in the treatment group in the southeastern area progressed further than youths in either the control or comparison groups.
  - Youths in both treatment and control groups progressed further than youths in comparison groups.

(3) Mean Number of Days Spent Hunting

- Outcome of this decision criterion was mixed.
  - Youths in treatment groups hunted no more days than youths in control groups.
  - Youths in treatment groups hunted a similar number of days as youths in comparison groups in all years.
  - Youths in control groups hunted fewer days than youths in comparison groups.

(4) Program Cost

- Annual implementation costs were $30,000-32,000 in each pilot area.
- It would take about 24 years before annual license revenue generated from AHP graduates ($33,264) would exceed annual implementation cost of $32,000, given the following conditions: (1) about 3,000 persons pass the SEC exam in each of the pilot areas in a given year, (2) about 50% (i.e., 1,500) are youths, (3) a minimum of 40% of the youths (i.e., 600) may meet criteria for participation in the AHP, (4) a minimum of 35% of those (i.e., 210) would agree to participate, (5) about 60% (i.e., 126) will buy an $11 license to hunt small game most years. These conditions would result in AHP participants generating about $1,386 in license revenue every year in each area.

- Given the findings from the pilot effort (i.e., numbers of youths taking the SEC; and percentages meeting criteria for participating in the AHP, agreeing to participate, and buying a license) it would take about 46 years before accumulated license revenue would exceed accumulated implementation costs ($1.47 million vs. $1.50 million).

- By comparison, the annual investment (not accumulated investment) could be recouped within 2 years if costs were contained to pilot levels with increased use of volunteers and program visibility, all invited youths agreed to participate, all apprentices were properly served, and all of them subsequently bought sportsmen licenses ($31 annually). That outcome is unlikely, but the probable outcome is somewhere between the pilot conditions and total success.

- This comparison suggests that the benefits are obvious of doing a better job of implementing the AHP.

- In addition, the AHP likely will have a magnifying impact if AHP graduates can successfully provide apprenticeship and social support to some persons who otherwise would not have become hunters, including their current friends, and later, their children. Those others will not have to participate in the AHP to become consistent hunters. Nonetheless, they will have benefitted from the AHP indirectly, and at least some of them will purchase a license in the future.

(5) Degree to Which Mentors Successfully Applied Concepts of Apprenticeship and Social Support

- Mentors in both areas were more successful at providing apprenticeship experiences for youths than in helping to build social support networks.

- In the southeastern area, most mentors involved youths in apprenticeship activities like nonhunting experiences (100%), hunting trips (100%), activity planning (only 7.7%), controlled shooting events (92.3%), seeing game harvested (61.5%), and seeing game cleaned (61.5%).

- About one-third of mentors in the southeastern area involved their apprentices' friends or family members in nonhunting activities (38.5%). Even fewer involved these persons in hunting activities (15.4%).

- About one-third of mentors in this area involved their own friends or family members in nonhunting activities (30.8%) and hunts (30.8%).
• Many mentors in the southeastern area believed they developed a sense of camaraderie with their apprentices (84.6%), and helped apprentices' family members become more supportive of the youths' hunting interests (92.3%).

• Although most mentors in this area believed they were able to relate well to their apprentices and their apprentices' families, we are unsure those self-assessments reflect development of supportive social support linkages for the youths.

• In the west-central area, most mentors involved their youths in apprenticeship experiences such as nonhunting activities (100%), hunting trips (87.5%), planning of activities (37.5%), controlled shooting activities (87.5%), seeing game harvested (68.8%), and seeing game cleaned (68.8%).

• One-third to one-half of mentors in that area involved apprentices' friends or family members in hunts (31.3%) or nonhunting activities (50.0%).

• One-half or more of the mentors in the west-central area involved their own friends or family members in hunts (50.0%) or nonhunting activities (56.3%).

• Most mentors in the west-central area believed they developed a sense of camaraderie with their apprentice (100%), and helped their apprentices' family members become more supportive of the youths' hunting interests (87.5%).

(6) Willingness of Mentors to be Paired Again

• Most mentors were willing to be rematched (92.3% in southeastern, 87.5% in west-central).

• Some mentors also seem to have the skills and time to accommodate more than a single apprentice at a time. One-half (50.0%) of mentors in the southeastern area were willing to be paired with multiple apprentices, and about one-third (35.7%) of mentors in the west-central area were willing to do so.

Summary of Decision Criteria

Criteria 1-3 pertain to theoretical considerations. Is it possible to successfully apply the theoretical concepts of apprenticeship and social support programmatically? Findings indicate that it is very difficult to programmatically replicate the "natural occurrences" of apprenticeship and social support that exist for most persons who become hunters in "traditional" ways. Some mentors, because of their personal qualities, will be successful
at facilitating these "natural occurrences" whereas others probably never will be able to do so even with training.

Criteria 4-6 pertain to practical considerations. *Can the program be implemented in a cost-effective manner?* No, in the short-term if current implementation actions are continued. However, cost-effectiveness can be enhanced if implementation is improved in ways described throughout this report. *Can mentors facilitate development of social support linkages without additional training?* Existing training efforts were not very successful at helping mentors understand the concept of social support. However, many mentors were able to operationalize some level of this concept without understanding it very well. *Are enough mentors willing to be rematched to reduce program cost and increase the potential for mentor experience to impact the program positively over time?* A very high percentage of trained mentors are willing to be rematched, and one-third to one-half are willing to be paired with multiple apprentices.

**CONCLUSIONS**

Our evaluation of the AHP indicates there is no easy "one-size-fits-all" solution to the challenge of increasing hunting retention. We believe agency-sponsored programs have the potential to provide benefits for at least some youths who have unmet interests in hunting. The various ways that persons are recruited into hunting and the conditions that influence whether they are retained are very difficult to recreate programmatically. Nonetheless, efforts like the AHP can provide opportunities for youths to enrich their hunting involvement by developing additional skills and experiencing social settings that are supportive of their hunting interest.
The AHP has potential to benefit hundreds of youths annually who otherwise would not act on their interest in hunting. Even success of that magnitude will not reverse the declining trend in hunting participation. Declining trends in hunting participation are a result of patterns of behavior occurring over the last two decades. Changes in the retention of graduates from SECs will not influence very quickly total number of participants, or the amount they participate.

One reason for this is the dynamic nature of hunting participation documented in previous research. About one-half of persons who have completed SECs consistently purchase a hunting license year-to-year, about one-third purchase hunting licenses only sporadically, and the remainder either drop out after a short time or never start hunting. The AHP is aimed at potential dropouts and those who never start. It is not likely to reduce sporadic behavior.

Another reason that agency-sponsored retention programs like the AHP may not increase license sales is that programs implemented to-date have not been able to replicate easily the range of conditions that produce the family-initiated, experience-rich "traditional hunters" who are most likely to be long-term participants. "Traditional hunters" are initiated into hunting through local hunting cultures that both produce and are held together by shared beliefs about appropriate reasons for hunting, kinds of satisfactions sought from hunting, and in general, what it means to be a hunter. Each local hunting culture likely succeeds in developing hunting interest in youths and helping the youths act on that interest because youths develop their beliefs about hunting largely through interaction with adults who reinforce hunting interest in the community's youths.
RECOMMENDATIONS FOR THE FUTURE

Recognize Shortcomings Associated with the Design of the AHP

Over the years since the AHP was designed, some important assumptions about potential apprentices have been examined and may need to be reconsidered. By 1990, only one-half as many persons were attending SECs annually as in 1978. In addition, the proportion of SEC attendees who meet the criteria for invitation to the AHP is smaller now compared to the late 1970s. Thus, a fully operational AHP relying on selection of apprentices through SECs has the potential of identifying far fewer youths who meet criteria to participate in the AHP than originally expected. The merit of emphasizing identification of these youths outside of SECs remains unknown. If this approach is taken, the focus of the AHP possibly will shift from hunter retention to hunter recruitment. It may depend on whether an indicator of hunting interest other than attendance at an SEC can be developed.

Some youths who lacked 1 or both the key elements of apprenticeship and social support bought licenses and went hunting. Perhaps measurable indicators of these concepts that seemed to work well in the late 1970s to identify youths who met criteria to participate in the AHP no longer worked well in the 1990s. Alternatively, some youths who had not experienced apprenticeship and/or social support prior to attending SECs may have found opportunities to experience these key elements outside of the AHP.

Develop More Realistic Goals and Expectations

It seems to be very difficult to programmatically duplicate the conditions necessary to "turn out" culturally active hunters. It is more realistic to develop a program that helps youth (and adults) who otherwise
would not hunt have opportunities to do so. Thus, a need exists to differentiate between recreationally active participants and culturally active participants as a measure of mentoring success.

Mentoring programs, like the AHP, that are based on the application of apprenticeship experiences and social support for hunting should not be expected to dramatically increase license sales. Such programs are best suited for enriching the hunting experiences as well as broadening and solidifying the set of motivations youths have for participating in hunting. Although these are likely to be reflected in consistent license purchases, progression of an individual to the continuation stage of hunting adoption should not be confused with narrow definitions of year-to-year participation (i.e., license buying behavior).

Concentrate on What is Possible Programmatically

Now that the evaluation has been completed, less concern should be placed on minimizing experimental error. We found that volunteers were not good at providing mentoring relationships but were capable of providing opportunities for youths to build on their interests in hunting and to get out in the field. Continued provision of such opportunities should be encouraged to reap both tangible and intangible benefits.

Recognize Consequences of Program Successes

Several important consequences may result from a successful AHP. One positive consequence may be recognition among sportsmen’s groups nationwide that New York is a leader in the preservation of "the hunting heritage" (Stephens 1992). Positive consequences for NYSDEC also are possible outside
of the "traditional" community of sportsmen's groups as further development and expansion of "Coalitions for Youth" provide NYSDEC with opportunities to forge or strengthen linkages with important, potential conservation allies with which the agency has not worked closely before.

A potential negative consequence of a successful AHP could be the development of expectations among various sportsmen's groups that scarce agency resources will be targeted permanently at hunter retention. This may become problematic. New relationships among coalition groups and NYSDEC may result in demands by coalition member groups for additional or new programs and services from the wildlife agency.

Finally, other consequences need to be considered as AHP apprentices are retained in the population of hunters, and their ideas about what hunting is all about and who they are as hunters (i.e., their identities as hunters [Enck 1996]) change and/or become more fully developed. Which kinds of hunters' identities might be produced through the AHP? What kinds of expectations will hunters have who are produced through the program? Are the types of hunters produced the ones desired by those who designed and implemented the AHP, or those desired by sportsmen supporters of the program? These kinds of questions are not answerable from our evaluation findings, and may represent either positive or negative consequences.
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OVERCOMING IMPEDIMENTS TO YOUTHS PARTICIPATING IN HUNTING:
PROGRAM OUTCOME EVALUATION

INTRODUCTION

This report is the last of a series presenting findings from a formative evaluation of a pilot Apprentice Hunter Program (AHP) developed by the New York State Department of Environmental Conservation (NYSDEC) to overcome impediments to youths participating in hunting. Previous findings were reported in Pomerantz and Decker (1986), Enck et al. (1988), Enck and Decker (1990), Enck and Brown (1992), and Enck (1993). This report presents a final evaluation of implementation efforts in 2 pilot areas—southeastern NY (NYSDEC Region 3) and west-central NY (NYSDEC Region 8). It also presents an evaluation of program outcomes.

Specific objectives are to:

(1) assess degree to which implementation stages described in the planning document (NYSDEC 1990) were followed,
(2) document and evaluate changes in planned implementation activities undertaken to enhance program success,
(3) assess outcomes of the AHP on youths who participated in it, and
(4) assess degree to which the AHP could be operationalized programmatically and consistently.

BACKGROUND

Hunting participation declined in New York State beginning in the early 1980’s. The number of persons attending sportsmen’s education courses (SECs), which is an index to hunting recruitment, declined 46% during 1982-86. In addition, the number of hunting licenses sold in the state, which is an index
of hunting recruitment and retention, declined about 30% during the same time period. Brown et al. (1987) suggested that those declining trends in hunting participation would continue without programmatic intervention from NYSDEC.

Developing that intervention depended on understanding the nature of people's participation in hunting. Participation in hunting is very dynamic, and does not involve a singular event. Becoming a hunter involves adopting the activity of hunting as a part of the set of activities in which a person participates.

Previous research on hunters and hunting led to the development of a concept called stage of hunting adoption (hereafter called hunting involvement). This concept was built on a model developed by HDRU from a combination of moral and cognitive development theories (e.g., Pomerantz and Decker 1986), innovation-adoption theories (e.g., Purdy et al. 1985), and empirical evidence from previous research (e.g., Applegate and Otto 1982, Decker et al. 1984, McCarty and Kelley 1985, Purdy et al. 1985). The model suggests that an individual passes through stages of involvement from general awareness of the activity, to developing an interest in it, to trying it, to continuing and enriching involvement over time. Alternatively, an individual may stop involvement and begin again later, or may stop altogether (Decker and Purdy 1986). A longitudinal study that followed a cohort of new hunters in the 1980s verified the model (Purdy et al. 1989).

Research by staff in the Human Dimensions Research Unit (HDRU) at Cornell University previously identified that lack of hunting apprenticeship opportunities and lack of social support for hunting were 2 of the most important impediments to people's progression towards the continuation stage of hunting involvement (Brown et al. 1981, Decker et al. 1984, Purdy et al. 1985).
Apprenticeship is defined as a set of pre-hunting or early hunting experiences occurring with someone who is a hunting role model or mentor. Through apprenticeship experiences, interested persons learn hunting skills and knowledge from someone they respect and trust. Apprenticeship involves learning "how-to" elements of hunting as well as learning how to make important decisions about the ethical elements of hunting. Social support for hunting is defined as encouragement and facilitation of a person's interest in hunting by others who are important in the life of that person and who (a) help further develop the person's hunting interest, (b) initiate the person into hunting, (c) accompany the person afield, and (d) reinforce the experience through post-hunt interaction.

Based on that information, NYSDEC and HDRU developed a study to determine whether a programmatic intervention based on the provision of apprenticeship experiences and social support for hunting could positively impact hunting participation in New York. A NYSDEC task force was formed in 1987 to design a pilot program aimed at young SEC graduates (<17 years old) in southeastern New York. Youths, rather than adults, were chosen as potential participants in the AHP because program designers believed that youths represent the primary future hunting population in New York, and youths constituted about 50% of SEC graduates annually (NYSDEC, unpubl. data). Program designers selected southeastern NY (NYSDEC Region 3) as the initial pilot area for implementation because they believed that area had a relatively large urban/suburban population that would provide a large number of youths who had an interest in hunting (i.e., attended a SEC), but who lacked apprenticeship experience or social support for hunting.
In mid-1992, the AHP was expanded to the west-central part of the state (NYSDEC Region 8). This area was added to the pilot effort to respond to support for the idea expressed by organized sportsmen’s groups, offset an inauspicious start in the southeastern pilot area, replicate the experimental aspects of program delivery, and determine the types of potential differences in successes and problems that could be expected in a part of the state that was considered by administrators to be more rural than the initial pilot area. However, program leaders chose to focus on the most urban portion of the area (Monroe County and the City of Rochester).

OVERALL 4-STAGE EVALUATION STRATEGY

We used a formative evaluation strategy which provided constant review and assessment of effectiveness during all stages of the pilot from development through implementation (Kraus and Allen 1987). This strategy provided opportunities to modify or strengthen the AHP as it was being developed and implemented. It also provided opportunities for understanding why various aspects of the AHP succeeded or failed.

Our application of this evaluation strategy had 4 stages:

(a) Theory application evaluation - process of examining whether the AHP was based on an appropriate model developed from theories and empirical evidence for the specific context in which the AHP was to be conducted. This stage has been completed, and was described in Enck et al. (1988).

(b) Program design evaluation - process of examining the proposed program design prior to implementation to determine if the design adhered to the conceptual model. This stage has been completed, and was described in Enck and Decker (1990).

(c) Program implementation evaluation - process of systematically monitoring the AHP as it was put into effect. Initial evaluation findings were described in Enck and Brown (1992) and Enck (1993). Additional implementation evaluation efforts are described in this report.
(d) Program outcome evaluation - process of determining the impacts of the AHP and reasons for success or failure. Initial results of this stage were reported in Enck et al. (1996). A complete description of program impacts are presented in this report.

**FINAL PROGRAM IMPLEMENTATION EVALUATION**

NYSDEC's (1990) planning document for the AHP described 11 stages of implementation (see Table 1). Stages 1-3 were addressed in Enck and Brown (1992). Initial findings from stages 4-11 were reported in Enck (1993). Some of those findings are repeated here to provide a complete documentation what occurred during each stage of implementation including:

(a) actions planned,
(b) initial efforts,
(c) evaluation of initial efforts,
(d) changes in efforts as a result of the evaluation,
(e) most effective efforts previously evaluated, and
(f) description and evaluation of efforts from 1993 through early 1995 when program outcome evaluation was conducted.

This report is the only complete documentation of what happened during implementation stages 4-11 of the AHP.

**Implementation Stage 4: Recruiting and Selecting Mentors**

Mentors were intended to provide mentoring through one-on-one contact with apprentices during a mutual year-long affiliation with the AHP. These volunteers were to provide the "treatments" of apprenticeship and social support for apprentices. The formative evaluation approach provided several opportunities to change general procedures over time to increase effectiveness of mentor recruitment and selection.
Table 1. Major implementation stages associated with New York's pilot Apprentice Hunter Program (From NYSDEC 1990:10-24).

<table>
<thead>
<tr>
<th>Stage</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Obtain final support from NYSDEC for the pilot program.</td>
</tr>
<tr>
<td>2.</td>
<td>Obtain support from New York State Conservation Council (NYSCC) for the pilot program.</td>
</tr>
<tr>
<td>3.</td>
<td>Obtain support of sportmen's education course (SEC) instructors.</td>
</tr>
<tr>
<td>4.</td>
<td>Recruit and select mentors.</td>
</tr>
<tr>
<td>5.</td>
<td>Screen and select potential apprentices.</td>
</tr>
<tr>
<td>6.</td>
<td>Develop and implement training workshops for mentors.</td>
</tr>
<tr>
<td>7.</td>
<td>Invite apprentices.</td>
</tr>
<tr>
<td>8.</td>
<td>Implement &quot;get-acquainted meetings&quot; for mentors and apprentices.</td>
</tr>
<tr>
<td>9.</td>
<td>Ensure communication between mentors and program leaders.</td>
</tr>
<tr>
<td>10.</td>
<td>Ensure and monitor subsequent contacts between mentors and apprentices.</td>
</tr>
<tr>
<td>11.</td>
<td>Develop a formal end to the mentoring process.</td>
</tr>
</tbody>
</table>

*Actions planned to recruit and select mentors.*

Program designers recognized that a variety of recruitment techniques would be most beneficial, and suggested that newspaper advertisements, presentations at sportmen's club meetings, and direct contact with SEC instructors be used. Interest was especially high to make use of 2 long-standing institutions (i.e., county sportmen's federations and the SEC program) through which contacts could be made with a large number of potential mentors in the pilot areas (NYSDEC 1990:12-15).

Program designers recognized from the conception of the AHP that backgrounds of potential mentors would have to be checked by law enforcement personnel to ensure persons with a history of conservation law violations were
not selected as mentors. Potential mentors were aware that background checks would be made. An application form was developed to assess whether volunteers were qualified to be mentors, obtain information needed to conduct background checks, and facilitate pairing of mentors with apprentices.

Initial efforts to recruit and select mentors.

Initial recruitment efforts were narrow in scope (Enck and Brown 1992:10-12). Program leaders who implemented the AHP (but who were not the same individuals as program designers) focussed on presentations to county sportsmen’s federation meetings and SEC instructors. Other mechanisms were not engaged initially because of research and administrative uncertainty about whether the AHP should be publicized due to potential experimental bias.

All volunteers who were interested in being mentors completed application forms to assess their qualifications. Program designers wanted to attract experienced hunters who exhibited safe and ethical hunting practices. Thus, mentors were required to be ≥18 years of age, have ≥7 years of hunting experience, and have no citations for hunting violations. Additional questions were asked on the application to facilitate pairing with apprentices (see NYSDEC 1990:13 for additional information about mentor applications).

Evaluation of initial efforts to recruit and select mentors.

Only about 10 mentors were identified in the southeastern area through either of the initial mechanisms used. Similarly poor results were experienced later in the west-central area. Officers from county sportsmen’s federations in both areas were interviewed about why initial efforts to
recruit mentors were not more successful. Several types of challenges were identified (Enck and Brown 1992:10-14, Enck 1993:4-10).

**Communication challenges.** Limited advertising about the AHP by NYSDEC gave federation officers the impression that the program was not very important. Federation officers "make up their own minds what to report back to local clubs," and not enough information was provided to help them decide whether the AHP was important enough to report back to local clubs. Program leaders made no follow-up presentations or telephone calls after the initial presentation. Also, presentations made by program leaders in February were too far in advance of training sessions that were planned for late summer.

**Liability challenges.** Federation officers were confused about who would be responsible "if the child does something wrong." Several officers mentioned fear of lawsuits related to their participation in the AHP.

**Time challenges.** Federation officers believed the AHP would take up too much of potential mentors' free time. Several officers mentioned the concern that mentors would have to drive to apprentices' homes before hunting and then drop them off again at the end of the hunt. Some were concerned about "having to spend all my precious hunting time" with the youths; hunting with the youths once in a while was acceptable but not every time the mentor went afield.

**Personal cost challenges.** Federation officers had been told that many youths would not have their own hunting equipment, and officers believed erroneously they would have to purchase hunting clothes and equipment for the youths. Many also recognized there would be petty cash expenses to consider such as breakfast or lunch, and gas stops.
Lack of ownership challenges.--In the west-central pilot area, federation officers raised concerns that mentors would not have enough input into decisions about with whom they would be paired. Several feared they "might not get along with their apprentice."

Changes in efforts to recruit and select mentors.

Several actions were taken to overcome challenges to participation by potential mentors (Enck and Brown 1992:14, Enck 1993:10-11). Mentors were provided liability protection by making all trained mentors official NYSDEC volunteers with the same protection as SEC instructors, which essentially gave them employee liability status. Additional information was provided in presentations to help potential mentors develop more informed expectations about the time and dollar costs associated with their participation in the AHP. Program leaders also began communicating more directly with potential mentors instead of relying on third parties (e.g., federation officers) to disseminate information. This enhanced opportunities for answering questions more quickly and accurately. More frequent training sessions were held to build upon enthusiasm when it was highest just after mentors became aware of the AHP. Finally, posters about the program were developed with the purpose of recruiting mentors. These posters were placed in opportunistic locations throughout the pilot area through the cooperation of Environmental Conservation Police officers.

Additional methods were engaged to make potential mentors more aware of the AHP including: (a) presentations at local sportmen's clubs, (b) news releases, (c) posters at county fairs, National Hunting and Fishing Day celebrations, Empire Farm Days, 4-H events, and sportmen's shows, (d) radio
public service announcements, (e) presentation at the annual meeting of the state Outdoor Writers Association, (f) an article in DEC's magazine The Conservationist, (g) personal contacts, (h) mass mailings to holders of turkey hunting permits, members of local chapters of the Ruffed Grouse society, National Wild Turkey Federation, and members of New York Bowmen, and (i) development of "Coalitions for Youth."

Closer working relationships also were developed between program leaders and DEC's law enforcement staff in both pilot areas so that background checks could be made more consistently and in a more timely manner. Development of these working relationships greatly enhanced completion of background checks.

Most effective efforts previously evaluated.

The number of persons expressing interest in becoming mentors increased substantially after some of the communication challenges were overcome (Table 2). An exception occurred in the southeast area in 1992-93, probably because program leaders concentrated on other aspects of implementation and not on mentor recruitment. We have no evidence that fewer persons were interested in becoming mentors in that area during 1992-93 (Enck 1993:10-11).

Targeting likely mentors.--Largest numbers of mentors were recruited through (a) mailings to targeted groups, (b) presentations to local sportsmen's clubs, (c) personal contacts, and (d) news releases. Communication directly between program leaders and potential mentors (rather than relying on third parties to deliver important information) overcame the challenge to participation by potential mentors. Regardless of the mechanism used to identify potential mentors, recruitment efforts were most successful from January through March. This was true especially if training sessions and
Table 2. Numbers of adults expressing interest in being mentors for New York’s Apprentice Hunter Program during 1990-93.

<table>
<thead>
<tr>
<th>Pilot Area</th>
<th>Year</th>
<th>Number of adults expressing interest</th>
<th>Cumulative number</th>
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<tr>
<td>Southeastern</td>
<td>1990</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>1991</td>
<td>42</td>
<td>52</td>
</tr>
<tr>
<td></td>
<td>1992</td>
<td>29</td>
<td>81</td>
</tr>
<tr>
<td></td>
<td>1993</td>
<td>3</td>
<td>84</td>
</tr>
<tr>
<td>West-central</td>
<td>1990</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td></td>
<td>1991</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td></td>
<td>1992</td>
<td>34</td>
<td>34</td>
</tr>
<tr>
<td></td>
<td>1993</td>
<td>41</td>
<td>75</td>
</tr>
</tbody>
</table>

Pairing with apprentices followed soon after volunteers expressed interest. During January through March each year, hunting seasons are winding down or have just ended, yet enthusiasm about hunting is still high.

*Conducting background checks.* Post-recruitment checks of mentors by law enforcement staff remained important for 2 reasons. Program leaders wanted to reduce the risk of having violators of conservation laws and other legally inappropriate individuals take on mentor roles. Also, parents of a few apprentices expressed concern about the background and character of mentors. The most vocal concerns were raised by parents of some of the youngest potential apprentices (<15 years of age). These parents seemed comforted when program leaders could tell them, "yes, we’ve done a check on these people, and they are 'ok.'"
Description and evaluation of 1993-95 efforts to recruit and select mentors.

Overcoming geographic disparity between mentors and apprentices.--Enough mentors were available to complete evaluation of the AHP when about 50 adults were recruited in each of the 2 pilot areas (i.e., by the end of 1993). However, geographic distribution of mentors relative to apprentices was, and remains, an impediment to success of the AHP. In an attempt to locate mentors in areas with high concentrations of apprentices, 2 kinds of grass-roots networks were developed and qualitatively examined: (1) "Coalitions for Youth" and (2) county coordinators.

Coalitions for Youth.--These coalitions were initiated in both pilot areas. In southeastern NY, the "Fish and Wildlife Coalition for Youth of the Hudson Valley-Catskills" involved about 2 dozen organizations with broad conservation orientations, as well as organizations devoted solely to hunting. A different kind of coalition developed in the west-central area. That coalition initially attracted about a dozen organizations devoted mostly to hunting, and lacked the broader conservation orientation of the coalition in the southeastern area.

The coalition in the southeastern pilot area has become at least marginally successful in terms of the AHP. Coalition members meet monthly to discuss ideas for reaching out to youths who have an interest in the outdoors and conservation, and whose interest could be supported and enhanced by the programs of particular member organizations of the coalition. This coalition elects officers, conducts fund-raising, and is incorporated as a non-profit organization. Members work together to identify opportunities (Fair's, Field Days, etc.) where just a few coalition members can present a broad range of information to interested youths about activities of all member organizations.
The purpose of this coalition—from the perspective of its members—is clearly to identify and provide support for youths, rather than to promote individual member organizations.

Another important purpose of this coalition is to reach adults who are interested in helping member organizations, including the AHP. According to program leaders in the southeastern area, more than a dozen mentors were attracted to the AHP during 1993-94 through contact with the coalition. Nonetheless, this coalition has not helped much in locating mentors in areas with a high number of unmatched apprentices.

In the west-central area, the coalition was dominated by hunter groups, met sporadically, and eventually ceased functioning. It had trouble developing an identity and purpose even though its member organizations were even more similar in scope and interests than coalition members in the other area. A major problem that prevented the west-central coalition from working was that a few members seemed more interested in gaining recognition for their respective organizations than in identifying and providing support for youths. This occurred because the focus of this coalition was "to preserve hunting," rather than to provide support for youths in the context of a broader interest in the outdoors and conservation. Because of internal friction among individual members of the coalition, the coalition never had a chance to become effective at identifying potential mentors.

**County coordinators.**—This kind of network was not successful. County coordinators were intended to develop grass-roots networks within their county

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1 This coalition provides an unparalleled opportunity for DEC to interact and work cooperatively with many conservation organizations—several of which DEC has never before worked with closely. This kind of coalition has the potential for providing DEC with long-term benefits that go well beyond the AHP.
to identify mentors located near apprentices soon after the latter were identified. Coordinators could not be found for every county, and only 2 or 3 mentors were identified by this mechanism. Program leaders believe the few persons who volunteered to be county coordinators did so for personal recognition, rather than because of commitment to youths through the AHP.

**Availability of female mentors and mentor teams.**—Another factor related to mentor recruitment and affecting AHP success was the availability of female mentors and husband/wife teams. Program designers had recognized the need for some female mentors because about 5% of apprentices were expected to be female (Enck 1993). Female mentors were desired because young girls were most likely to respond positively to program efforts if they were matched with adult female mentors (Pomerantz and Decker 1986). In addition, program designers had been concerned about the inappropriateness of pairing adult, male mentors with young, female apprentices.

We became aware of the desirability of concentrating on husband/wife teams as mentors after interviewing apprentices, parents of apprentices, and female members of such teams. In the limited number of cases where husband/wife mentor teams existed, male apprentices indicated they sometimes felt most comfortable interacting with the wife because she tended to be "more understanding" and seemed to place less pressure on the youth to succeed in the field than did the husband. Women mentors also seemed able to communicate most effectively with the mothers of apprentices, which was important in developing social support linkages for the youths.

**Recommendations for Recruiting and Selecting Mentors**

- Use direct communication techniques such as targeted mailings/presentations and personal contacts.
Use "Coalitions for Youth" and other grass-roots efforts to overcome geographic disparities in distributions of apprentices and mentors.

- Increase recruitment of husband/wife mentor teams.

- After recruiting and selecting mentors, train and pair them as soon as possible so their interest does not wane.

Implementation Stage 5: Screening and Selecting Potential Apprentices

The AHP required a method of identifying youths who had an expressed interest in hunting, but who were likely to dissociate from hunting without programmatic intervention. Youths who attended an SEC were considered to have expressed an interest in hunting. Each year, between 2,500 and 3,700 persons take the SEC in each of the pilot areas (NYSDEC, unpubl. data). Of those, as many as 900 are youths who meet criteria for participation in the AHP (Enck 1993).

*Actions planned to screen and select potential apprentices.*

SEC instructors were to distribute screening questionnaires to all attendees (youths and adults) in the pilot areas. Instructors then were to send completed questionnaires to HDRU for analysis. HDRU staff were to determine which youths could benefit from participation in the AHP based on several characteristics including age, lack of apprenticeship experiences, and/or lack of social support for hunting (Table 3). Names, addresses, and telephone numbers of potential apprentices were to be forwarded to program leaders in the pilot areas (NYSDEC 1990:16-17).
Table 3. Criteria for selecting youths to participate in New York's Apprentice Hunter Program.

Age ≤17 years when taking the sportsmen's education course, and at least 1 of the following:
- No previous hunting experience (the term "hunting" meant that the youths could have gone afield with others who were hunting even though the youths may not have carried a firearm).
- No family members hunt.
- No friends hunt.
- Family members would never be able to hunt with the youths.
- Friends would never be able to hunt with the youths.

*Initial efforts to screen and select potential apprentices.*

From 1990 through 1994, several approaches were tried for (a) distributing screening instruments to SEC instructors, (b) retrieving completed screening instruments, (c) analyzing the instruments to determine which youths could benefit from the pilot AHP, and (d) providing program leaders with names, telephone numbers, and addresses of potential apprentices (Enck and Brown 1992:15-17). In 1990 in southeastern NY (the only area being evaluated at the time), screening instruments were provided to an incomplete set of SEC instructors as they obtained other SEC materials. In 1991, the statewide SEC coordinator mailed a letter to all SEC instructors in the southeastern pilot area asking for their assistance, and screening instruments
again were provided to SEC instructors as they obtained other SEC materials. The west-central area was added to the pilot effort in summer 1991. Screening instruments were mailed to those SEC instructors in that area who were expected to offer SEC courses from September-December 1991.

HDRU staff developed a computer program to determine which SEC students could benefit from the pilot AHP. Completed screening instruments were coded and entered into a computer database. Analyses were conducted as batches of ≥100 completed instruments were gathered. HDRU mailed lists of potential apprentices to program leaders in the pilot areas. Those leaders then transferred the information either to index cards (initially) or computer files (in 1992 and later).

*Evaluation of initial efforts to screen and select potential apprentices.*

Three kinds of delays inhibited the screening process initially: (a) distribution delays, (b) return delays, and (c) process delays (Enck and Brown 1992:15-17, Enck 1993:12-19).

**Distribution delays.**—These delays were associated with getting screening instruments to SEC instructors. Many SEC instructors (all of whom are volunteers) expressed interest in and support for the pilot AHP, but distribution delays prevented program leaders from taking advantage of that support. Mixed messages were sent to instructors during the early part of AHP implementation. Program designers did not want to advertise the pilot because of the very real concern that it would create expectations among the hunting community that the AHP would be expanded statewide after the pilot was used to
"get the bugs out." Interviews with some SEC instructors indicated that the lack of advertising about the AHP was perceived by some to mean that there was little official NYSDEC support for the pilot program. Others said they perceived NYSDEC did not advertise the AHP very much because of a fear of negative response by anti-hunting groups. As a result of the lack of perceived program support, some instructors did not believe that completion of screening instruments was a high priority.

In addition, many instructors did not receive screening instruments in a timely manner. Most instructors obtain course materials only every other year.3 Therefore, about one-half of the instructors never were made aware of the pilot AHP or received screening instruments in 1990 in the southeastern area. The same kind of distribution delays were experienced in 1991. Many inconsistencies also were experienced with respect to distribution of screening instruments at SECs. Some instructors distributed screening instruments to all their students, some distributed the instruments only to youths, and others chose not to distribute screening instruments to any of their students. In addition, some instructors spoke extensively about the AHP (contrary to their instructions) whereas others did not mention it at all.

Return delays.--These were associated with getting completed screening instruments from SEC instructors to HDRU. Some instructors mailed completed screening instruments to HDRU immediately after their courses were completed. Others sent the completed instruments to the SEC coordinator in the regional

2The purpose of the pilot program was to test experimentally whether provision of apprenticeship and social support would increase hunter retention.

3SEC instructors must be recertified every 2 years. Many instructors obtain enough supplies to last for about 2 years at the time of their recertification.
NYSDEC office who then mailed them to HDRU. Most of the time, HDRU staff received completed instruments weeks or months (sometimes years) after a particular course was completed.

One of the most important factors influencing both distribution and return delays initially was limited ownership by NYSDEC staff. Initially, in the southeastern area, ownership by the SEC coordinator was high. The coordinator was heavily involved in program design, took a large personal role in contacting volunteer instructors, and conducted other implementation activities. Sadly, the coordinator died. NYSDEC Regional Administrators refilled the position with a "temporary item" (rather than a permanent biologist position). By default, the new person had little knowledge of, or ownership in, the AHP. This lack of ownership continues, and is related most to limited regional administrative interest in the AHP rather than limited personal interest (see pages 70-71).

In the west-central area, ownership by the SEC coordinator also was high at first. The coordinator and other regional administrative staff initially reacted to the AHP as an operational program rather than as an experimental pilot program intended to: (a) develop, through a formative evaluation, a working model that had the greatest theoretical chance of succeeding, and (b) test the feasibility of "going operational" with a modified model. The coordinator was very supportive of emphasizing implementation and getting as many apprentices involved as possible. He had less interest in supporting efforts to determine which elements of the pilot worked best, and why they worked. Ironically, part of the evaluation was to determine the ability of staff to mount an operational program. The coordinator's approach was "right on target" in that respect, but was problematic in terms of constraints
associated with the theory-examining aspects of the evaluation. As the coordinator's interpretation of the AHP was challenged by NYSDEC central office staff and HDRU evaluators who insisted on emphasizing the experimental nature of the program, his ownership and support decreased somewhat.

Process delays.—These were associated with identifying potential apprentices and getting their names from HDRU to program leaders. Process delays greatly increased the time between when students completed screening instruments at SECs and when potential apprentices were identified. HDRU had intended to conduct analysis of screening instruments as large batches were returned because that would be the most efficient use of available staff. However, because large batches of completed instruments never were received, HDRU waited up to several months between entering batches of completed instruments. In addition, HDRU erred in developing their computer program to identify potential apprentices. Finding and fixing the problem resulted in more potential apprentices being identified correctly, but delayed identification of some for ≥1 year.

Changes in efforts to screen and select potential apprentices.

Numerous enhancements were made to all phases of screening and selection of potential apprentices (Enck and Brown 1992:15-17, Enck 1993:17-19). Enhancements were made to communication efforts between program leaders and SEC instructors. First, letters were sent from the statewide SEC coordinator to instructors to increase awareness of the pilot AHP, and to increase understanding that all students were to receive screening instruments. Second, screening instruments were mailed to instructors in 1993, instead of giving them to instructors as they obtained other SEC materials. Finally,
both the level of participation and the speed at which instructors sent completed instruments to HDRU for analysis were increased by providing postage-paid return envelopes to instructors.

Enhancements also were made to data analysis and the methodology used to send lists of potential apprentices to program leaders. HDRU made changes in the computer program to ensure that all potential apprentices were identified. In addition, HDRU sent lists of potential apprentices to program leaders in the form of computer files instead of printouts. That eliminated the necessity for program leaders to type those names and addresses into a database themselves.

The various changes made in this stage of implementation increased the efficiency and speed of identifying potential apprentices. During 1990, relatively few potential apprentices were identified in the southeastern area. As problems were addressed and overcome in subsequent years, the number of youths screened and the number of potential apprentices identified both increased when compared to first year totals (Table 4). In the west-central area, implementation began more than a year after initial efforts in the southeastern area. The number of youths screened and the number of potential apprentices identified decreased in that area in 1992, but increased considerably in 1993. In both areas, the ratio of youths who met participation criteria to total youths screened increased consistently, thereby indicating improvement in the successful identification of youths to be invited.
Table 4. Number of youths screened and selected to participate in New York's Apprentice Hunter Program, 1990-93.

<table>
<thead>
<tr>
<th>Pilot Area</th>
<th>Year</th>
<th>Number Youths Screened</th>
<th>Number Youths Selected</th>
<th>Percent Youths Selected</th>
</tr>
</thead>
<tbody>
<tr>
<td>Southeastern</td>
<td>1990</td>
<td>261</td>
<td>88</td>
<td>33.7</td>
</tr>
<tr>
<td></td>
<td>1991</td>
<td>602</td>
<td>246</td>
<td>40.9</td>
</tr>
<tr>
<td></td>
<td>1992</td>
<td>355</td>
<td>160</td>
<td>45.1</td>
</tr>
<tr>
<td></td>
<td>1993</td>
<td>405</td>
<td>186</td>
<td>45.9</td>
</tr>
<tr>
<td></td>
<td>Year not recorded</td>
<td>165</td>
<td>62</td>
<td>37.6</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1788</td>
<td>742</td>
<td>41.5</td>
</tr>
<tr>
<td>West-central</td>
<td>1990</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td></td>
<td>1991</td>
<td>287</td>
<td>115</td>
<td>40.0</td>
</tr>
<tr>
<td></td>
<td>1992</td>
<td>182</td>
<td>97</td>
<td>53.3</td>
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<td></td>
<td>1993</td>
<td>803</td>
<td>400</td>
<td>49.8</td>
</tr>
<tr>
<td></td>
<td>Year not recorded</td>
<td>132</td>
<td>128</td>
<td>96.7</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1404</td>
<td>740</td>
<td>52.7</td>
</tr>
</tbody>
</table>

Some additional methods were developed to augment the small number of potential apprentices identified initially via SECs. In 1992, program leaders telephoned SEC students who had not had an opportunity to complete a screening instrument when they took the course. This was discontinued after a short time because it was exceedingly inefficient. Also, increased efforts were
made to publicize the AHP so that interested youths could "self-select" for participation in the AHP. These methods included: (a) news releases, (b) public service announcement on the radio, (c) presentation to the annual meeting of the state's Outdoor Writers Association, (d) letters to youth organizations identified through the United Way, (e) letters to mentors encouraging them to identify potential apprentices in their localities, (f) contacts with NRA gun safety instructors, (g) posters at County Fairs and local high schools, (h) presentations at Conservation Field Days, (i) an article in DEC's The Conservationist magazine, (j) contacts with The Boy Scouts of America--Explorer division, and (k) "Coalitions for Youth."

Youths who became aware of the AHP through most of the methodologies listed above had to make a self-assessment about their interest and whether they met criteria to participate in the program. They also had to have enough interest to contact program leaders for more information. This put a great deal of responsibility on young persons, most of whom by definition had unsupported interest in hunting. Of greater promise were methods in which adults (e.g., mentors, Boy Scout officials, staff and volunteers with other youth-oriented organizations) identified potential apprentices and notified program leaders about them.

*Most effective efforts previously evaluated.*

Better coordination overcame distribution and process delays.--Better coordination and communication between program leaders and SEC instructors was a key to improving distribution and completion of screening instruments (Enck 1993:18-19). Of particular importance was mailing screening instruments to all instructors in late summer just prior to when most SECs were offered.
Also, providing instructors with postage-paid return envelopes reduced time between screening and data analysis. Screening instruments were analyzed by HDRU as soon as they were received, rather than waiting for large batches of instruments to be received. HDRU also provided computer files to program leaders to reduce duplication of effort and to eliminate some process delays.

Screening of SEC attendees was an important method of identifying potential apprentices (Enck 1993:18-19). Many of those persons had a strong, demonstrated interest in hunting. Some youths who were interested in hunting were unable to attend an SEC, and others were not screened or did not become aware of the AHP through an SEC. Youths who did not become aware of the AHP through the regular screening process may be identified best by adults who are in positions to be knowledgeable about the youths' hunting interest. For example, the "Coalition for Youth" in the southeastern area showed some promise as a mechanism for identifying potential apprentices through knowledgeable adults.

Description and evaluation of 1993-95 efforts to screen and select potential apprentices.

Coordination between AHP and SECs.--Efforts to enhance liaison between AHP and SEC instructors helped to overcome some delays in selecting potential apprentices. SEC instructors in both pilot areas have been made aware of the AHP. Based on returned instruments, instructors seem to understand that all students are to be screened. Mailing screening materials directly to instructors annually seems to have overcome some of the most important impediments associated with distribution of instruments. However, obtaining
completed screening instruments from SEC instructors remains 1 of the biggest stumbling blocks although it is an essential part of the AHP.

Provision of postage-paid return envelopes to instructors helped. By the end of 1994, HDRU staff were removed from the selection process altogether. SEC instructors mailed completed screening instruments to NYSDEC central office staff (or in some cases regional program leaders). These staff used a template developed by HDRU to identify youths who were to be invited to participate in the AHP. Use of these templates improved efficiency and eliminated some of the process delays encountered previously.

Additional benefit may be gained by providing all SEC attendees with an AHP brochure. Then potential program participants (who would still be identified through screening instruments) would become aware of the program earlier and would be familiar with it when the program leader calls to invite them to participate. Given our concerns about whether SEC attendees have been completing screening instruments accurately, this also would provide youths with a way to self-select if they believe they would really benefit from the program.

Indicator of previous apprenticeship experience—Several concerns persist, including a need to resolve problems associated with use of the term

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4 These templates are file folders into which completed screening instruments are placed. Each template has holes cut in it corresponding to the qualifying response categories on the instrument. If any of the response categories showing through the template have been marked by the person who completed that screening instrument, that person is qualified for invitation into the AHP.
"hunting" on the screening instrument as an indicator of the concept of apprenticeship. Currently, the question is asked:

Have you ever been hunting (the term "hunting" means that you went afield with others who were hunting, even though you may not have carried a firearm)?

This indicator of apprenticeship experience evolved over time, but has been used consistently in HDRU studies since the late 1980s (see Purdy et al. 1989). However, responses to this question and subsequent interviews of potential apprentices show that many SEC students interpret this definition narrowly. That is, many persons who answer "no" to the question have participated in hunting-related experiences other than personally carrying a firearm afield in pursuit of game animals. Thus, some persons—those whose selection was based solely on answering "no" to this apprenticeship indicator—were erroneously selected for the AHP. Related to this, some youths also apparently felt uncomfortable saying that they had been hunting prior to being certified at an SEC, and thus answered "no" when in fact they had accompanied others during hunting activities.

Identifying apprentices who are ready to participate.—A second concern is that in the majority of cases in which the screening instrument correctly identifies potential apprentices, it does not help program leaders determine which of the youths are mature enough or are otherwise psychologically ready to enter the AHP. Program leaders will continue to have to assess youths' "readiness" for the AHP when they call to invite potential apprentices to participate.

Potential apprentices who are not psychologically ready for the AHP are most often the ones who drop out of the AHP after being paired with a mentor. This raises the question of whether attendance at an SEC is an appropriate
indicator of a person's potential desire to act on their interest in hunting by participating in an AHP-type program. Recall that demonstrated interest is important because the AHP is aimed at retaining interested persons in hunting. Attendance at an SEC may be best indicative of a person being in an interest stage of hunting involvement, rather than being a strong indicator of their desire to act on that interest at the present time by participating in the AHP. Indeed, earlier studies found that many youths attend SECs to learn about wildlife management or accompany a friend, and not to get certified to go hunting (Purdy et al. 1985, Purdy and Decker 1986).

Changes in apprenticeship experience between screening and inviting.--A third concern is that some confusion still exists about cases where the "qualifications" of a potential apprentice change between screening and invitation. In up to 10% of the cases, the screening instrument correctly identified a youth who lacked apprenticeship experience and/or social support for hunting prior to taking an SEC, but whose father took the SEC with them, passed the certification exam, and subsequently hunted with the youth. In all those cases, program leaders did not invite those youths to participate because "they already had someone to hunt with." In the absence of data to the contrary and to take a conservative approach, it likely would be beneficial to those youths to involve them in the AHP. Because their recently certified fathers have little hunting experience of their own, they may not be very effective hunting mentors and those youths still may benefit from the AHP.

Link AHP screening forms and SEC exams.--An impediment that prevented invitation of as many as 10% of the potential apprentices was illegible handwriting. Program leaders found they sometimes could not interpret a
youth's name, address, telephone number, or other information from the screening instrument. This problem could be overcome by altering the format of the SEC exam, and linking the screening instrument more closely to the exam. For example, changing the exam format to include an answer sheet similar to the "bubble-type" answer sheet associated with other kinds of standardized tests (e.g., ACT, SAT) may enhance NYSDEC's capability to maintain records of SEC participants. Even changing the top section of the answer sheet, including the person's name, address, telephone number, date of birth, and gender, would reduce the likelihood that important data would be illegible.

The SEC exam and screening instrument also could be more closely linked if they were developed as 1 package instead of being administered as 2 separate items. Further, persons who did not pass the exam could be identified and removed from the pool of potential apprentices to achieve consistency with the legal requirements for participation in the AHP. The legal requirement for participation should be reviewed carefully given that youths who do not pass the exam still may benefit greatly by participating in the AHP.

Screen all potential apprentices.—Another continuing concern is screening of candidates identified by mechanisms other than screening instruments. In the past, persons who found out about the pilot through mechanisms other than SECs were interviewed to determine their interest in the AHP. Unfortunately, few if any of those persons were screened adequately to determine whether they actually lacked apprenticeship or social support. This precluded collection of data necessary for the evaluation, and likely contributed to use of scarce resources (e.g., mentors in "prime" geographic
locales) for persons who may not have benefited from the AHP as much as other youths. To enhance program efficiency and effectiveness in the future, all persons should be screened carefully. This will enhance the ability of program leaders to match mentors and apprentices successfully.

**Tap into adult networks.**—It still has not been determined whether all the potential benefits associated with Coalitions for Youth can be realized. However, these coalitions may be more successful at identifying potential apprentices than other groups of adults. The potential network of people who have previously been asked to help find potential apprentices includes: DEC staff, organized sportsmen’s groups, mentors, and SEC instructors. Unfortunately, none of these groups are well-suited to locate youths who can benefit from the AHP. They do not exist for that purpose, and are not linked to local institutions that are best suited to locate these youths. However, individuals in some of organizations associated with the coalition in the southeastern area are in the business of finding or coming into contact with youths who could benefit from programs like the AHP.

**Recommendations for Screening and Selecting Apprentices**

- Develop better communication and coordination between the AHP and SECs.
- Ensure all SEC graduates are screened by formally linking SEC exam forms and AHP screening instruments.
- Develop more restrictive criteria for selecting youths to be invited to participate in the AHP improving the indicator of previous apprenticeship experience used in the screening instrument.
- Use "Coalitions for Youth" and other grass-roots efforts to identify potential apprentices who do not attend SECs or who are not made aware of the AHP through SECs.
- Screen all youths who are identified through mechanisms other than SECs to determine whether they meet criteria for participating in the AHP.
Implementation Stage 6: Training Mentors

All mentors were required to attend training workshops for 2 reasons. First, they were expected to have different levels of skills and abilities. Second, because of the experimental nature of the pilot program, it was necessary for the mentors to be trained to provide a very specific "treatment" of apprenticeship and social support.

Actions planned to train mentors.

Training workshops originally were designed as short 2.5 hour sessions that covered background about the AHP, its purpose, safety and liability considerations, information about mentoring, and discussions about apprenticeship and social support. These workshops were intended to provide an initial mechanism through which mentors could meet each other and develop networks of persons with whom they could interact and on whom they could depend for assistance during implementation (NYSDEC 1990:15).

Initial efforts to train mentors.

Several training workshops were held in late 1990 and early 1991 in the southeastern area. These were held in different geographic locations to facilitate attendance by mentors who lived in different parts of the pilot area. Each workshop was attended by 8-12 mentors. Workshops for mentors in the west-central area began in the summer of 1992 (Enck and Brown 1992:17-18).

Evaluation of initial efforts to train mentors.

The initial workshops in the southeastern area were successful in summarizing why the pilot AHP was needed, how it was designed, an overview of
major stages associated with its implementation, and its intended outcome (Enck and Brown 1992:17-18, Enck 1993:20-24). Telephone interviews with mentors who attended these workshops indicated that the meetings helped mentors understand the AHP, but not their role in it. Of greatest concern was that the mentors were not sure what was meant by the terms apprenticeship and social support. In addition, they did not understand how they could ensure that these "treatments" were provided to their apprentices. Interviews with mentors and apprentices revealed that the types of activities in which pairs engaged, the persons who were involved in those activities, and the character of the activities all indicated that apprentices were not receiving the full treatment of apprenticeship and social support.

Changes in efforts to train mentors.

Several actions were taken to enhance both mentor training and the likelihood that apprentices could receive adequate apprenticeship and social support, and to test more effectively the hypotheses being considered in the pilot (Enck and Brown 1992:17, Enck 1993:24). First, a set of recommendations was developed by HDRU staff to enhance training, including: (a) increase the duration of training workshops to allow more meaningful training, (b) incorporate more experiential role playing to help mentors better understand the concepts of apprenticeship and social support, and (c) have paired mentors and apprentices share stories of successful experiences. Second, HDRU staff prepared a detailed description of the concept of social support and how it could be implemented better in the AHP (see Appendix A). Finally, program leaders who facilitated the training workshops revised the workshops to explain more fully what was meant by apprenticeship and social support.
At the most basic level apprenticeship is intended to provide youth with the tools needed to become a hunter. This can be accomplished by providing various hunting-related activities within the context of a mentoring relationship: (a) opportunities to practice shooting a firearm, (b) help in finding and discussing information about hunting, (c) trips afield with others who are scouting or hunting, (d) seeing game animals killed or cleaned, (e) chances to prepare and eat wild game, and (f) listening and sharing hunting stories with others.

Social support is intended to help make the apprentice feel good about his/her decision to become a hunter. This can be accomplished by: (a) developing a large, balanced, and positive hunting setting in which the apprentice can participate, (b) developing strong, positive, adaptive linkages between the hunting setting and other settings important to the apprentice, and (c) helping to overcome parental time and hunting-knowledge constraints. In particular, the mentor has 2 important tasks:

1. encourage positive social support for hunting to occur within social settings to which the youth already belongs (e.g., family setting, peer-group setting); and
2. build bridges between the apprentice and various social settings in which positive hunting support exists (e.g., hunting club settings, mentor’s peer-group setting).

**Most effective efforts previously evaluated.**

Revision of the training workshops to include a detailed explanation of the "treatment" concepts seemed to alleviate concerns by some mentors that they did not fully understand those concepts (Enck 1993:21-22). However, it
is not unusual for persons to believe they understand a particular concept, but then have difficulty applying that understanding. This happened with many mentors; additional explanation helped, but they still were unable to transfer their knowledge of the concepts into actions.

Most of the recommendations for enhancing mentor training workshops were not enacted. The duration of the workshops was not increased because of a concern that potential mentors would be "turned off" by the time commitment. No experiential, hands-on, role-playing learning opportunities were incorporated into the workshops. This was partly a result of the decision not to increase time spent in workshops, and partly an outcome based on inexperience and lack of those kinds of skills by program leaders who facilitated the workshops.

Description and evaluation of 1993-95 efforts to train mentors.

Improve training.—Through the end of 1993, >50 mentors attended training workshops in both pilot areas. (Table 5). A major concern persists that many of the mentors do not bring to the AHP the skills or experience necessary to do what is asked of them, and they still do not obtain those skills or experiences in the training workshop. Certainly, some mentors were able to provide adequately the intended "treatment" during the time they were paired with an apprentice. However, the training workshops generally were not successful in helping mentors put the concepts of apprenticeship and social support into practice.

Train mentors soon after they are recruited.—Given that the most successful recruitment of mentors occurred during late winter, training workshops should occur as soon after mentors are recruited as possible (i.e.,
February through April). Interviews with mentors indicated that delays between recruitment and training and between training and pairing contributed to mentors losing interest in participating (Enck 1993). By training mentors in February through April, mentors could be paired with apprentices prior to spring turkey hunting season, and would have time to develop a closer relationship before other hunting seasons in the fall.

Table 5. Number of mentors trained and paired as part of New York’s Apprentice Hunter Program, 1990-93.

<table>
<thead>
<tr>
<th>Pilot Area</th>
<th>Year</th>
<th>Number Mentors Trained</th>
<th>Number Mentors Paireda</th>
</tr>
</thead>
<tbody>
<tr>
<td>Southeastern</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1990</td>
<td>3</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>1991</td>
<td>24</td>
<td>1</td>
<td></td>
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<tr>
<td>1992</td>
<td>25</td>
<td>16</td>
<td></td>
</tr>
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<td>1993</td>
<td>1</td>
<td>2b</td>
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</tr>
<tr>
<td></td>
<td>53</td>
<td>19</td>
<td></td>
</tr>
<tr>
<td>West-central</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1990</td>
<td>NA</td>
<td>NA</td>
<td></td>
</tr>
<tr>
<td>1991</td>
<td>0</td>
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</tr>
<tr>
<td></td>
<td>78</td>
<td>74</td>
<td></td>
</tr>
</tbody>
</table>

aSome mentors were paired with >1 apprentice.

bSome mentors trained in 1992 were paired in 1993.
Combine training efforts of various programs. -- Training of AHP mentors also could be combined with training efforts of other DEC-sponsored programs such as the SEC program and the 4-H Sportfishing & Aquatic Resources Education Program (SAREP). Many of the existing training workshops for SEC instructors are held in late winter and early spring. Some persons interested in becoming AHP mentors also are SEC instructors. Combining training efforts would increase efficiency. It also would increase awareness and understanding about the various programs.

Recommendations for Training Mentors

- Train mentors as soon after recruitment as possible.
- Increase the duration of training workshops to at least 1 full day to allow more meaningful training.
- Hire professional trainers to conduct the workshops.
- Incorporate into the workshops sharing of successful experiences by paired mentors and apprentices to help trainees better understand the concepts of apprenticeship and social support, and how these concepts can be put into everyday practice.
- Incorporate into the workshops role playing and other experiential techniques.
- Integrate AHP training workshops with training workshops for other NYSDEC-sponsored programs such as SECs and SAREP.

Implementation Stage 7: Inviting Apprentices

During the first few years of implementation, program leaders were committed to the experimental nature of the AHP rather than advocating and marketing an operational program. Therefore, the first contact that most potential apprentices and their parents had with the AHP prior to about 1993 was an invitation to participate in it. This notification effort was
important in terms of communicating the purpose of the AHP and its potential benefits to the youths and their parents.

Actions planned to invite apprentices.

Potential apprentices were to be contacted by mail. Program leaders were to prepare a briefing packet that included information about the AHP aimed at parents/guardians, and additional information specifically addressed to the youths. The packet also was to include a formal invitation to participate in an introductory meeting about the AHP, a permission slip to participate in the program, a form on which they could indicate their transportation needs relative to the introductory meeting, and a postage-paid return envelope for their R.S.V.P. (NYSDEC 1990:18-19).

Initial efforts to invite apprentices.

Program leaders prepared the briefing packets as described above. However, out of the first 50 potential apprentices identified, only 9 were mailed a briefing packet because of problems identifying mentors living near identified apprentices. Also, only 4 of the 9 potential apprentices responded to the invitation and agreed to come to an introductory meeting (Enck and Brown 1992:19).

Evaluation of initial efforts to invite apprentices.

Notification resulted in a disappointingly small number of apprentices in the AHP initially. Several factors contributed to this (Enck and Brown 1992:25-27). First, a smaller number of potential apprentices was identified than expected because of distribution, return, and process delays described on
pages 16-19. Those delays reduced the size of the pool of potential apprentices who could be notified and invited. Second, that pool was reduced further by the geographic disparity between apprentices and mentors as described on page 11. Only those potential apprentices for whom nearby mentors could be identified were notified immediately. Third, fewer than one-half of the potential apprentices who were invited by mail to participate returned an R.S.V.P.

In 1991-92, program leaders mailed invitations to hundreds of potential apprentices (the exact number was not recorded) who were identified with screening instruments. Although the exact response rate to these letters is unknown, it was negligible (i.e., probably <5%). It simply was unrealistic to expect youths to respond to a written invitation. Potential apprentices were young and probably did not have easy access to mailing supplies. In addition, these youths were invited, in part, because they did not know how to take advantage of hunting opportunities. It was not realistic to expect them to respond to an invitation to participate in something in which they did not know how to participate in the first place. Most likely many of these youths had questions and concerns that went unasked and unanswered when they received an invitation by mail. The extent that parents received, read, or discussed the invitation with apprentices is unknown, but anecdotally we know it was inconsistent.

Open houses and field days also were tried as opportunities for potential apprentices and parents to obtain information about the AHP, and to meet the program leader and some of the other participants. These events required a great deal of coordination and effort on the part of program leaders and volunteers. Notifications about open houses and field days were
made through the local media. No invitations were made directly to individuals. Perhaps as a result, very few youths identified via screening instruments attended any of these events.

Changes in efforts to invite apprentices.

Two changes were made in the way youths were invited to participate in the pilot (Enck 1993:28-29). First, youths identified through screening instruments were invited to participate via mail followed-up with a telephone call. Second, new efforts were made to reach potential apprentices who had attended an SEC, but who did not have an opportunity to complete a screening instrument there. Those youths were identified from course rosters. Many months after they attended an SEC, these persons were called and screened with an instrument adapted by HDRU staff for use via telephone. This technique allowed potential apprentices to be invited as soon as they were selected to receive an invitation.

Unfortunately, program leaders were not well trained to use the telephone instruments, and many youths who did not have apprenticeship and/or social support were not invited to participate (based on computer analysis of telephone screening instruments by HDRU staff). Further, it often took several months for program leaders to receive a roster from a given SEC so they could begin calling. This time lag decreased the efficiency that might have been gained with this technique. Also, the labor-intensive effort needed to contact those youths reduced the technique’s usefulness.
Most effective efforts previously evaluated.

Telephoning youths—who were identified from screening instruments—was a more effective method of ensuring a high positive response to an invitation than extending an invitation by letter only (Enck 1993:28-29). Letters did not work well by themselves because youths had to be motivated to contact program leaders about participating in the AHP. Letters were not motivating enough for youths who, by definition, lacked much support at home for hunting.

Description and evaluation of 1993-95 efforts to invite apprentices.

A large number of youths who met criteria for participating in the AHP were identified in both areas but a much smaller number were actually invited to participate (Table 6). Implementation constraints did not permit as extensive an invitation effort as was needed to invite all youths who met participation criteria. Nonetheless, increasing experience by program leaders and increasing understanding of how to overcome some constraints through evaluation efforts both contributed to increasing effectiveness of notification efforts.

In the southeastern area the percentage of youths agreeing to participate after being invited to join the AHP generally increased during the evaluation period (Table 6). This is also true of the west-central area except for 1993 when a substantial number of youths were invited but less than one-quarter agreed to participate. Many of these youths apparently were identified in previous years, but various implementation constraints prevented them from being officially invited until 1993. This time lapse could have contributed to a waning interest in the AHP, resulting in a higher rate of declined invitations.
Table 6. Numbers of invited youths agreeing and declining to participate in New York's Apprentice Hunter Program, 1990-93.

<table>
<thead>
<tr>
<th>Pilot Area</th>
<th>Year</th>
<th>Number Youths Selected</th>
<th>Number Youths Invited</th>
<th>Number Youths Agreed</th>
<th>Percent of Invited Who Agreed</th>
<th>Number Youths Declined</th>
<th>Percent of Invited Who Declined</th>
</tr>
</thead>
<tbody>
<tr>
<td>Southeastern</td>
<td>1990</td>
<td>88</td>
<td>4</td>
<td>4</td>
<td>100.0</td>
<td>0</td>
<td>0.0</td>
</tr>
<tr>
<td></td>
<td>1991</td>
<td>246</td>
<td>14</td>
<td>10</td>
<td>71.4</td>
<td>4</td>
<td>28.6</td>
</tr>
<tr>
<td></td>
<td>1992</td>
<td>160</td>
<td>11</td>
<td>10</td>
<td>90.9</td>
<td>1</td>
<td>9.1</td>
</tr>
<tr>
<td></td>
<td>1993</td>
<td>186</td>
<td>3</td>
<td>3</td>
<td>100.0</td>
<td>0</td>
<td>0.0</td>
</tr>
<tr>
<td>Missing</td>
<td>62</td>
<td>33^a</td>
<td>0</td>
<td>0.0</td>
<td>2</td>
<td>100.0</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>742</td>
<td>65</td>
<td>27</td>
<td>41.5</td>
<td>7</td>
<td>10.8</td>
</tr>
<tr>
<td>West-central Area</td>
<td>1990</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
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<tr>
<td></td>
<td>1991</td>
<td>115</td>
<td>10</td>
<td>1</td>
<td>10.0</td>
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<td>90.0</td>
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<td></td>
<td>1992</td>
<td>97</td>
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<td>4</td>
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<tr>
<td></td>
<td>1993</td>
<td>400</td>
<td>210^b</td>
<td>48</td>
<td>22.9</td>
<td>54</td>
<td>25.7</td>
</tr>
<tr>
<td>Missing</td>
<td>128</td>
<td>68</td>
<td>50</td>
<td>73.5</td>
<td>18</td>
<td>26.5</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>740</td>
<td>296</td>
<td>103</td>
<td>34.8</td>
<td>85</td>
<td>28.7</td>
</tr>
</tbody>
</table>

^a No records were kept for 31 of these youths.

^b No records were kept for 108 of these youths.
Mail invitations followed-up by telephone work best. — Telephoning potential apprentices to follow-up on mailed invitations resulted in a higher number of apprentices who agreed to take part in the pilot AHP than only mailing invitations or only calling. Starting in 1992, telephone invitations were extended to youths as a follow-up to mail invitations. This action increased the proportion of youths who agreed to participate during that year in both areas (Table 6). Program leaders also gained several important insights that increased the efficiency of their efforts. For example, potential apprentices usually can be reached only during a very specific time period. The youngest potential apprentices, especially, could be reached only from 5:30–8:00 pm on weekdays. Potential apprentices rarely could be reached on weekends.

Although telephoning is the only feasible way to invite potential apprentices to participate in the AHP, program leaders found telephoning to be very time consuming. Many telephone outcomes (e.g., no answer, busy signal, youth not home, and wrong number) consumed time and effort, but did not result in any invitations being extended. Such outcomes increased frustration for program leaders who also try to contact mentors, previously paired apprentices, and other program participants during the same limited time frame.

Volunteers can extend telephone invitations if trained. — Volunteers or staff hired specifically to help with telephoning may allow program leaders to concentrate on other implementation duties. Program leaders suggested that any persons given responsibility to telephone potential apprentices should be: (a) an excellent communicator, (b) persistent, (c) knowledgeable about the AHP, and (d) female. The gender characteristic reflects concerns from
apprentices and their parents about having an unknown male telephone their home and request to speak to a specified youth in the family. This concern was emphasized by, but not limited to, parents of female potential apprentices.

Acceptance of invitations linked to readiness to participate.—Program leaders gained many insights about why potential apprentices who were invited by telephone agreed or did not agree to participate in the AHP. Youths who were most likely to agree to participate were: (a) psychologically mature (i.e., confident, remembered completing the screening instrument, could relate to the telephone discussion), (b) interested in the outdoors, (c) interested in learning more about hunting, and (d) knowledgeable about, but had no direct involvement with, DEC. Those who declined the invitation when called on the telephone: (a) could not remember completing the screening instrument, (b) had a limited attention span and had difficulty maintaining a directed telephone conversation, (c) were more inclined than those who agreed to participate to mention time constraints, (d) were fearful of participating (especially those ≤14 years of age), (e) had concerns about other family, school, or recreational obligations, and (f) attended an SEC as part of a conservation education camp rather than because they were really interested in hunting.

In addition, some parents were less likely than others to allow their children to participate. These parents usually: (a) had previous negative experience with DEC, or (b) did not appreciate that their child was "singled out as needing special help." The notion that the AHP was for youths who needed "special help" to become a hunter resulted from some of the initial
advertisements for the AHP, including official program brochures. Media stories about the AHP still refer to it this way.

Program leaders also found it difficult to convince some parents that their children might benefit from, or need, social support and/or apprenticeship. This occurred for some nonhunting parents. It also occurred for a few fathers who took the SEC with their children (i.e., were new to hunting themselves), and believed they could provide the youth with adequate apprenticeship experiences (which may be true).

Consider changing when invitations are extended.--The central office program coordinator described the following summary of alternatives for enhancing the timing of selecting, inviting and assisting potential apprentices.

Alternative 1: Maintain Current System, but do it Better.-- The first alternative is to live with the consequences associated with having the majority of SECs occurring close to or during the hunting season. SECs are required for all new hunters, and the majority of attendees might not attend without that requirement. Further, if it was not illegal for 12- and 13-year olds to hunt without a parent or legal guardian, at least some probably would be allowed to do so by parents who likely are naive to the risks of injury associated with untrained youths.

Under this alternative, most potential apprentices are identified from September through November when most SEC's are offered. Most are then matched during late winter or early spring. This timing for matching is influenced most heavily by timing of SEC's and the time it takes to select and invite apprentices. By accident rather than design, matched apprentices receive apprenticeship and social support just prior to spring turkey season and during the several months prior to the fall hunting seasons.
One implication of youths having time to receive apprenticeship and social support during the months before hunting seasons occur is that a greater emphasis can be placed on helping youths become "tradition-and-responsibility-aware hunters" and less emphasis on simply being successful in getting out and trying hunting as a sport or recreation. Another implication is that it also provides an opportunity to "unselect" youths who have been hunting with their own social support network after attending an SEC, and who may be satisfied with their progression as hunters. Further, it provides an opportunity for youths who have gone hunting with their own family and friends, but who were disappointed with their experiences, to continue in the AHP.

**Alternative 2: Change Timing of SECs.**—A second alternative is to change the timing of some SECs on the premise that significant numbers of youths would benefit from the AHP before going afield with family members or friends. An implication of this alternative would be that youths could gain experiences they would not receive even from well intentioned, but inadequate, existing family, friend, or community networks.

This alternative would require aggressive advertising and development of an apprentice selection process that would get youths lacking apprenticeship and inactive or less-than-ideal social support to SECs held in July and August. It probably would require development of special courses, mentor involvement in those courses, and speedier, more reliable interviewing and invitation of apprentices who meet criteria for participation. If these actions occurred, apprentices could participate in the AHP for at least 1 month prior to the start of any hunting seasons.

Institutional forces associated with the SECs may make it hard for this alternative to be successful if tried. Perhaps opportunity for success could be improved if NYSDEC does not try to overcome those forces for all attendees but just potential apprentices. An advantage of this alternative is that it proactively conditions staff for success. A disadvantage is that
some apprentices who simply would have been delayed in benefitting from the AHP would consume expensive training resources, perhaps unnecessarily.

**Alternative 3: Concentrate on Identifying Youths Who do not Make it to SECs.**—A more basic alternative is to shift attention away from youths who make it to SECs. Program designers initially concentrated on identifying potential apprentices from among SEC graduates for 2 reasons (NYSDEC 1990). First, retention of persons who at least had reached at least an interest stage of hunting involvement (see pages 2-3) was to be the focus of the AHP, rather than recruitment of new hunters (i.e., by facilitating their progression into awareness or interest stages). Attendance at an SEC was an indicator that a youth already had that interest. Second, SECs provided a relatively parsimonious mechanism for screening a large number of youths.

Changes in the characteristics of SEC graduates over the last 2 decades indicate that some youths who are interested in hunting may not be getting to SECs at all, and that relatively large numbers of interested youths might be identified through mechanisms other than SECs. The proportion of youth SEC graduates who met criteria to participate in the AHP decreased from about 80% in 1978 (Brown et al. 1981) to only 18% in 1983 (Purdy and Decker 1986). A small sample of youths screened in the 2 pilot areas during 1991–92 showed that the percentage of youth SEC graduates who met criteria for participating in the AHP increased to about 45% (Enck 1993). During the period 1978–92, the number of persons attending SECs annually declined about 50% from about 54,000 to about 27,000 (NYSDEC unpubl. data).

Using databases from 1978, 1983, and 1991–92, Enck (1993) examined reasons why youths attended an SEC, whether they had experienced apprenticeship and social support, and demographic information. He concluded that in 1978, SEC graduates were a mix of: (1) a "rural core" of prepared, committed, new hunters who attended SECs to meet legal certification requirements, and (2) a
nonrural group who were interested in hunting but who lacked apprenticeship and social support (i.e., who met criteria for participating in the AHP). Most of the decrease in overall numbers of SEC graduates during 1978-83 seems to have resulted from a loss of persons from the unprepared, nonrural group. By 1983, most SEC graduates were from among the prepared, committed, rural group, which may be why only 18% of SEC graduates in that year met criteria to participate in the AHP. Between 1983 and 1992, changes occurred in what had been the "rural-core" of SEC graduates as many of those youths no longer were experiencing or taking advantage of apprenticeship and social support. That may be a reason why the percentage of youths graduating from SECs in 1991-92 and who met criteria to participate in the AHP increased to about 45% although the number attending SECs annually remained at mid-1980s levels.

The increase in the percentage of SEC graduates between 1983 and 1992 who met criteria to participate in the AHP suggests that screening at SECs remains a viable mechanism for identifying youths who can benefit from an AHP experience. However, the large decrease in the percentage of youths between 1978 and 1983 who met criteria to participate, coupled with the remaining low overall SEC attendance, suggest that many interested youths, particularly from nonrural areas, may not even be getting to SECs. There may be as many as 1 of these youth for every SEC graduate, and they may have a higher likelihood of benefitting from an AHP than youths who have found enough social support to make it to an SEC.

Evaluation data suggest that this last alternative should be considered carefully. Certainly, as many apprentices joined the AHP "off the street" (i.e., by calling the program leaders and indicating a desire to participate) as joined through the regular screening and invitation process linked to SECs. On the surface, this may point to a need to focus on reaching youths outside of SECs, especially those youths who don't make it to SECs in the first place.
However, very few of the youths who joined the AHP "off the street" had never attended an SEC. They simply were never screened at an SEC, and nor did program leaders screen them after they were identified. Thus, it is equally likely that those youths: (a) met criteria to participate in the AHP, or (b) were "hard-core" hunters looking for additional experiences and social support networks. Undoubtedly, additional youths could be reached by widely advertising the AHP outside of SECs. The evaluation findings suggest that many of those same youths could be reached by ensuring that all SEC instructors screen everyone who attends their SECs.

Despite this caution, various benefits might result by changing when youths are identified and invited to participate. Program staff must decide which of these alternatives or combination of alternatives to pursue. Corresponding changes in program implementation then must be enacted.

Recommendations for Inviting Apprentices

- Use trained volunteers to extend invitations via telephone to potential apprentices in a timely manner after they have been screened.
- Revise the official AHP brochure to address several inconsistencies and/or false statements.
- Develop a realistic timetable for inviting apprentices to participate that takes into account possible changes in the timing of when SECs are offered as well as possible changes in timing of other implementation efforts.

Implementation Stage 8: Pairing Mentors and Apprentices

Pairing of mentors and apprentices was one of the most important stages of implementation. The initial meeting was expected to have a profound effect on the outcome of the pairing process. During this meeting, each mentor had to assess the social context in which the apprentice lived, and had to start establishing social support linkages with the apprentice.
**Actions planned to pair mentors and apprentices.**

"Get-acquainted" meetings were planned as a way of formally introducing mentors and apprentices (NYSDEC 1990:20-24). These meetings also were intended to provide additional information to apprentices and their parents about the AHP. Further, it provided mentors and apprentices an opportunity to plan their first 1-on-1 meeting with each other.

**Initial efforts to pair mentors and apprentices.**

In the southeastern pilot area, 2 "get-acquainted" meetings were held with small numbers of apprentices and mentors (<5 pairs at each meeting) in late 1991 and early 1992 (Enck and Brown 1992:19-23). Several additional mentors attended and expected to be paired although no apprentices had been selected for them. Parents of apprentices attended the meetings, and received answers to their questions about the AHP.

**Evaluation of initial efforts to pair mentors and apprentices.**

Training and skill level of facilitators had an important impact on the success of these meetings. Persons with different amounts of training and skill facilitated each of the initial meetings, and the meeting facilitated by the most skilled and best trained facilitator was more organized, overcame the greatest number of unanticipated problems, and provided a qualitatively superior introduction to the AHP for the apprentices and their parents (Enck and Brown 1992:19-23, Enck 1993:29-34).

"Get-acquainted" meetings provided an opportunity for questions to be answered about the AHP. It also provided an "official feel" to the program which was important for some parents who initially were leery of having their
child participate in a 1-on-1 program with an unknown adult. The format allowed mentors to meet and share ideas and concerns. It also was successful in creating a first level of social support for apprentices by letting them meet other youths who shared their interest and lack of knowledge about hunting.

Unfortunately, a limited number of potential apprentices were identified and agreed to participate in the first few of these pairing meetings. Geographic disparity between mentors and apprentices made it difficult to organize well-attended "get-acquainted" meetings. In addition, other time commitments of parents and potential apprentices reduced attendance at the meetings.

An unexpected concern raised by both mentors and apprentices' parents was lack of ownership in the matching of mentors and apprentices. Mentors were concerned they would be paired with an apprentice with whom they would share few hunting interests. Parents were particularly wary of allowing their son or daughter to be paired with an adult they did not know. These concerns reduced the number of persons who attended "get-acquainted" meetings because participants believed they were going to be "forced" into matches.

Changes in efforts to pair of mentors and apprentices.

Two enhancements were made to overcome poor attendance at "get-acquainted" meetings (Enck and Brown 1992:23, Enck 1993:32-34). First, additional efforts were made to increase the pool of potential apprentices by doing a better job of distributing screening instruments, shortening the time between screening and selection, and identifying potential apprentices from sources other than SECs. Second, efforts were made to increase the ownership
in the pairing process among parents and mentors. These efforts involved informal group meetings or "field days" at which trained mentors could meet potential apprentices and decide with whom they might want to be paired. In addition, some mentors talked with potential apprentices several times via telephone or in person so they could get to know them better before deciding whether to be paired with them.

**Most effective efforts previously evaluated.**

*Group pairing meetings are most efficient and effective.* A key element of group pairing meetings was their "official" feel or nature (Enck 1993:32-34). The importance of having an "official" feel to the pairing was described previously. Another key element was that group meetings provided an opportunity for potential apprentices to meet other youths who were as unsure about what hunting is all about as they were. Group meetings thus provided an important first step in developing social support networks of same-age peers and/or a frame of reference for developing a sense of self-acceptance for apprentices. The original "get-acquainted" meetings provided more of an opportunity for parents and apprentices to learn about the AHP and ask questions about it than did the field-days meetings. The former specifically related to the AHP whereas the latter usually related to hunting in general.

**Description and evaluation of 1993-95 efforts to pair mentors and apprentices.**

Several important challenges relating to this implementation stage continue to be experienced by program leaders. These include: (a) maintaining the interest of potential participants (both mentors and...
apprentices), (b) complexity of the pairing process, and (c) the timing of pairing relative to other important implementation stages.

Maintaining participant interest.--Program leaders had to find ways of maintaining the interest of mentors and apprentices who could not be paired quickly because of disparate geographic distributions of trained mentors and interested apprentices. Many mentors were not paired in the same year they were trained (recall Table 5). Likewise, some potential apprentices who agreed to participate waited up to a year to be paired (Table 7). In some years, the number of youths paired was higher than the number of youths who agreed to participate in that same year. This discrepancy is a result of pairing delays from 1 year to the next. An important challenge was to maintain the youths' interest in both the AHP and in hunting during the interim. Planned, consistent communication with these youths was difficult to maintain because program leaders were faced with competing priorities (e.g., inviting youths to participate, training mentors).

Complexity of the pairing process.--The pairing process is a set of related steps that happen at different times and with different speed for each pair. Tracking the progress of pairs is difficult and time-consuming. Assisting a pair and interacting with apprentices' parents requires a high degree of communication and follow-up by leaders or volunteers.

The first step is to confirm that both potential apprentice and mentor remain interested. Next, a pairing meeting must be arranged and conducted. Finally, consistent and frequent communication with apprentices, their parents, and mentors is necessary for leaders to keep informed about pairing success or failure.
Table 7. Number of youths paired after agreeing to participate in New York’s Apprentice Hunter Program, 1990-93.

<table>
<thead>
<tr>
<th>Pilot Area</th>
<th>Year</th>
<th>Number Youths Agreed</th>
<th>Number Youths Paired</th>
</tr>
</thead>
<tbody>
<tr>
<td>Southeastern</td>
<td>1990</td>
<td>4</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>1991</td>
<td>10</td>
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<td>1992</td>
<td>10</td>
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<td>2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>27</td>
<td>19</td>
</tr>
<tr>
<td>West-central</td>
<td>1990</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td></td>
<td>1991</td>
<td>1</td>
<td>0</td>
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</tr>
<tr>
<td></td>
<td></td>
<td>53</td>
<td>59</td>
</tr>
</tbody>
</table>

Timing of pairing.—Program leaders were most successful pairing apprentices with mentors several months after potential apprentices were identified. Most potential apprentices were identified from September through November when most SEC’s were offered. However, matching efforts were, by default, more successful from February through April than in the fall. Timing of SEC’s, and the time needed to analyze screening instruments and call apprentices pushed matching into late winter. This was somewhat fortuitous. Hunting seasons were winding down or had just ended by late winter, yet potential mentors were still excited about hunting. Late winter and early
spring also is a time of year when most apprentices and mentors are not too busy with family obligations like vacations.

Program leaders found that introducing apprentices and mentors during late winter through early spring provided the pair with time to get to know each other before "being thrown into a hunting situation." Perhaps most importantly, it provided apprentices with time to develop a sense of what hunting is all about instead of simply providing opportunities for youths to go afield and shoot at game animals. This distinction seemed to be most important for youths who had the least prior exposure to hunting and hunters.

An important task is to maintain the youths' interest in the AHP if they are invited to participate during the fall, but not paired until late winter/early spring. This task may be made easier by waiting until January or February to invite youths to participate. Many of the state's hunting seasons have ended by then. When program leaders call youths and invite them to participate, they can assess whether the youths have found a hunting network, or whether they still can benefit from participating in the AHP. Waiting until winter to invite youths will decrease the time between when the invitation is extended and when youths are paired with mentors. However, waiting will not address the possibility that potential apprentices' hunting interest will decrease during the interim from when they complete an SEC and when they are invited to participate in the AHP.

Pairing mentors with >1 apprentice.—Another important insight gained through interviews with mentors was that some mentors have the skills and time to be paired with >1 apprentice at a time. In the few cases where this occurred, greatest opportunity for success seemed to occur when a second apprentice was added some months after the original apprentice. That delay
provided the second apprentice with a same-age, slightly more experienced "buddy" with whom the less-experienced youth could talk things over. That way the second youth did not have to confide in a mentor who sometimes was considered by the youth to be too "gung-ho" and achievement-oriented. This interaction between apprentices seemed to enhance their development as hunters. The relationship was based on shared experiences rather than on hierarchical roles of teacher and student.

Recommendations for Pairing Mentors and Apprentices

- Use group meetings as much as possible as the pairing mechanism.
- Use volunteers to perform much of the necessary and frequent communication with mentors, apprentices, and apprentices' parents.
- More fully evaluate pairing mentors with more than 1 apprentice at a time.

Implementation Stage 9: Communicating with Mentors

Communication between mentors "in the field" and program leaders was necessary to exchange information, provide moral support, and share feedback about successes and problems. Numerous mechanisms were planned and evaluated.

Actions planned to communicate with mentors.

Three types of communication mechanisms were planned initially (NYSDEC 1990:23). First, a newsletter was to be produced by program leaders detailing information about AHP activities for mentors, apprentices, and parents. Second, at least 2 contacts via telephone or in-person between program leaders and mentors were planned—1 contact during the first 3 months of the AHP, and the other before the ninth month. Finally, mentors were to be provided with
the telephone number of program leaders for any contacts mentors wanted to initiate.

Initial efforts to communicate with mentors.

In early 1992, 1 of the mentors volunteered to develop a newsletter. He produced 1 edition before withdrawing from the AHP due to other obligations. From July 1992 through January 1994, program leaders produced and mailed a bi-monthly newsletter to all mentors, apprentices, parents, and other persons interested in the AHP. Newsletters included general information about the program (e.g., news about the "Coalition for Youth", numbers of participants). They also included helpful hints on field preparation and cooking of game, reminders about hunting safety, a calendar of up-coming events, information about wildlife management, and "letters to the editor" (Enck 1993:34-35).

Program leaders generally did not contact mentors in-person during initial months of implementation. Phone contact was made only when indirect information (e.g., word-of-mouth information from others, lack of communication from mentor) suggested that a pair might be experiencing a "problem." A schedule of third month and ninth month telephone contacts was not developed or followed, largely due to the many competing priorities faced by program leaders. Mentors were provided with telephone numbers for program leaders and encouraged to call, but few did (Enck 1993:34-35).

Evaluation of initial efforts to communicate with mentors.

Telephone interviews with mentors and apprentices revealed that many communication needs went unmet. Participants generally desired additional types of and more frequent communication with program leaders. Participants
also desired opportunities to meet with other AHP participants to share experiences, and to build networks (Enck 1993:34-37).

Changes in efforts to communicate with mentors.

Program leaders developed and coordinated field days and picnics to provide participants with opportunities for sharing of experiences and networking (Enck 1993:35). These events largely were planned as social functions, rather than how-to or educational experiences. Efforts also were made to develop "Coalitions for Youth" in both areas (see pages 11-13).

Most effective efforts previously evaluated.

Telephone contacts.--Over time, program leaders become more proficient in using telephone contacts to communicate with mentors and apprentices. For example, more frequent calls to mentors allowed program leaders to encourage mentors to be more aggressive in following-up with apprentices. Also, more frequent calls to apprentices and their parents allowed leaders to obtain feedback about the program from those participants.

Group events.--Frequent but irregularly scheduled events that provided opportunities for mentors and apprentices to meet and share experiences were invaluable for some mentors and apprentices. These events gave mentors a chance to find out from others what experiences seemed "to work" for their apprentices, and to share some frustrations about the difficulties they faced. Field days and picnics also provided a chance for apprentices to meet and interact with other youths who were just as inexperienced about hunting as they were. However, these events generally were not well-attended. Some mentors and apprentices lived too far away from centrally located events.
Others simply had difficulty finding convenient times when mentors and apprentices could get together for individual activities.

Emergence and evolution of the "Coalitions for Youth" were too new to have been evaluated previously in the context of providing opportunities for mentors and youths to meet other AHP participants. Evaluation of recent efforts of the coalitions in this context is provided below.

**Description and evaluation of 1993-95 efforts to communicate with mentors.**

AHP-sponsored events such as field days and picnics have been continued on an irregular basis. These provided an important social and informational function for some participants. However, they were poorly attended in general. Program leaders found that these events especially were ineffective during the fall when most hunting seasons occur. AHP-sponsored events likely would be better attended either just prior to or just after the hunting seasons.

One exception was AHP-sponsored hunts. Several pheasant and waterfowl hunts were held during the appropriate hunting seasons in both pilot areas. About 12 pairs at a time participated in these hunts, and preregistration was necessary because of their popularity. These were well-attended because they provided high-success opportunities for both apprentices and mentors.

The "Fish and Wildlife Coalition for Youth" in the southeastern pilot area sponsored several events for youths to become introduced to and better acquainted with the conservation of fish, wildlife, and other natural resources. These events usually included participation by a dozen or more youth-related or natural resource-related organizations. Although they were not directed specifically at participants in the AHP, numerous program
participants took advantage of those events as opportunities to communicate with each other and with program leaders. The coalition in the west-central pilot did not provide these kinds of activities.

**Recommendations for Communicating with Mentors:**

- Use trained volunteers to perform much of the necessary and frequent telephone communication with mentors.

- Use the "Fish and Wildlife Coalition for Youth" in the southeastern area as a communication mechanism, and encourage the emergence of a similar coalition in the west-central area.

- Use field days and picnics targeted specifically at AHP participants as a communication mechanism, and hold these events either just prior to or just after the hunting seasons.

**Implementation Stage 10: Ensuring and Monitoring Subsequent Contacts Between Mentors and Apprentices**

Contacts between mentors and apprentices during their year-long pairing are the "meat and potatoes" of the AHP. It is during these contacts that youths are provided with opportunities to develop hunting knowledge and skills, and to develop social support networks of persons supportive about hunting. In essence, it is through these contacts that youths learn about being a hunter, rather than someone who simply goes hunting.

**Actions planned for ensuring and monitoring subsequent contacts.**

Pairs were encouraged to meet for a minimum of 15 times over 12 months. The exact number and types of contacts were to be determined by the pair within guidelines presented in the planning document (NYSDEC 1990:19-20). It was expected initially that the New York State Conservation Council and various local sportsmen’s organizations would provide support for and
facilitate contacts between mentors and apprentices. Mentors were encouraged to rely on the AHP for as much or as little support as they needed to achieve their responsibilities in the AHP (NYSDEC 1990:23-24).

*Initial efforts to ensure and monitor subsequent contacts.*

We contacted mentors and apprentices after they had been paired about 6 months to determine whether program goals were being met. Most pairs had met several times in that 6-month period. However, most were averaging the 1-2 meetings per month needed to accomplish the requirement of meeting 15 times per year. Many were on a pace to meet only 3-4 times in a year. At the other extreme, a few highly motivated pairs met 4-8 times a month. Pairs in both areas hunted an average of about once every 2 months during the 6-month hunting season (Enck 1993:37-51).

To be considered a successful pairing, the mentor and apprentice had to remain paired for at least 1 year (Table 8). During the 3.5 years considered

<table>
<thead>
<tr>
<th>Pilot area</th>
<th>Number of pairs originally matched</th>
<th>Number matched &gt;1 year</th>
<th>Number of unsuccessful pairs</th>
<th>Number of youths rematched</th>
</tr>
</thead>
<tbody>
<tr>
<td>Southeastern</td>
<td>19</td>
<td>15</td>
<td>4</td>
<td>0</td>
</tr>
<tr>
<td>West-central</td>
<td>74</td>
<td>64</td>
<td>10</td>
<td>5</td>
</tr>
</tbody>
</table>
in this evaluation, the southeastern area experienced only 4 apprentice drop-outs from a total of 19 original pairs. The west-central area had only 10 apprentice drop-outs out of the original 74 pairs. Five of these 10 were rematched and became part of the total number of successful pairs.

We also found that short-term goals related to apprenticeship and social support were not being met to the desired degree. Fewer than one-half of the apprentices were receiving intended types and levels of apprenticeship experience. Overall, most apprentices were not developing hunting-related skills and knowledge, camaraderie with mentors or other hunting companions, or decision-making skills. Further, few mentors initially were successful at helping their apprentices develop social support networks. Mentors were most often involving their own family and friends in activities they conducted with their apprentices. At least initially, mentors were not involving apprentices’ family members or friends in activities. Although involvement by family members was not an absolute necessity, their lack of involvement decreased the likelihood that lasting social support networks were being formed.

*Evaluation of initial efforts to ensure and monitor subsequent contacts.*

Numerous reasons were discovered about why mentors were not more successful at providing apprenticeship experience and social support for apprentices (Enck 1993:37-42). First, mentors and apprentices simply were not meeting often enough. Second, training workshops were ineffective at helping mentors understand (a) the concepts of apprenticeship and social support, and (b) how to put these concepts into practice.
Other reasons pertained to what both mentors and apprentices described as "personality conflicts." Even with training workshops to help mentors develop realistic expectations, many mentors expected apprentices to be as excited and knowledgeable about hunting as their own children and friends. Mentors did not understand that most apprentices were "too shy" simply because they were uncertain about their knowledge and skills. They did not fully understand that their role including being cheerleader, philosopher, and friend as well as teacher and provider of opportunity.

Reasons why mentors could not successfully provide social support also were determined. Some mentors were not able to involve parents or friends of their apprentices because parents and friends were busy with other priorities and/or had little interest in hunting. Perhaps the most important reason, however, was mentors' lack of understanding about what was meant by the concept. In many cases, training workshops were not successful in helping mentors understand the complexities of social support and how they could develop social support networks through their activities with apprentices.

**Description and evaluation of 1993-95 efforts to ensure and monitor subsequent contacts.**

**Defining apprenticeship and social support.** HDRU staff prepared a "white paper" describing in detail the concepts of apprenticeship and social support. Program leaders incorporated additional information from this "white paper" into mentor training materials. Unfortunately, presentation of additional information in training workshops did not help mentors who had already gone through the training. Efforts were made to convey the new information to previously-trained mentors through the AHP newsletter, informal
conversations at AHP-sponsored events, and telephone communication. We do not know the degree to which this new information reached previously-trained mentors, or the degree to which they found it useful in enhancing their activities with apprentices.

**Applying apprenticeship and social support.**—Observations at training workshops during 1993–94 indicated that program leaders generally were unsuccessful in using the new information to help mentors understand the concepts of apprenticeship and social support. Verbal descriptions of general approaches for incorporating apprenticeship and social support into activities and presentation of complex ideas through visual models left many mentors confused and even disillusioned about their roles in the AHP. Recommendations made in Enck (1993) to involve more hands-on training and to provide opportunities for mentors and apprentices from "successful" pairs to attend the training workshops and share their experiences generally were not heeded. Experienced mentors and apprentices were expected to provide real-world grounding for helping new mentors understand what was expected of them. However, experienced mentors and apprentices were invited to only 1 or 2 training workshops.

In early 1995, all apprentices and mentors who had been paired for ≥1 year were contacted by telephone, and interviewed about their experiences together. Improvements in both provision of apprenticeship experiences and development of social support networks occurred since mentors and apprentices were interviewed in 1993 (Enck 1993). Mentors indicated that apprentices were being provided with apprenticeship experiences such as controlled shooting and practicing firearms handling (Table 9). However, few apprentices were offered
Table 9. Apprenticeship activities provided by mentors to their apprentices as part of New York’s Apprentice Hunter Program, 1990-93.

<table>
<thead>
<tr>
<th>Activity</th>
<th>Southeastern Area (n = 13\textsuperscript{a})</th>
<th>West-central Area (n = 16)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean number of nonhunting activities during pairing</td>
<td>17.8</td>
<td>9.3</td>
</tr>
<tr>
<td>Percent of apprentices who:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>participated in controlled shooting activities</td>
<td>92.3</td>
<td>87.5</td>
</tr>
<tr>
<td>specifically practiced safe firearms handling</td>
<td>92.3</td>
<td>87.5</td>
</tr>
<tr>
<td>helped to plan activities</td>
<td>7.7</td>
<td>37.5</td>
</tr>
<tr>
<td>Mean number of hunting activities during pairing</td>
<td>7.2</td>
<td>6.3</td>
</tr>
<tr>
<td>Mean number of trips apprentices:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>saw game harvested by someone else</td>
<td>2.6</td>
<td>3.1</td>
</tr>
<tr>
<td>saw game cleaned by someone else</td>
<td>2.6</td>
<td>2.8</td>
</tr>
<tr>
<td>harvested game themselves</td>
<td>1.7</td>
<td>1.6</td>
</tr>
<tr>
<td>cleaned game themselves</td>
<td>1.7</td>
<td>1.4</td>
</tr>
</tbody>
</table>

\textsuperscript{a}Number of mentors interviewed.
opportunities to help plan activities. Nearly all apprentices had >1 chance to see others harvest and clean game or to harvest and clean game themselves.

Some mentors were successful at developing social support networks of persons who already were important to their apprentices (Table 10). These networks most often included apprentices' parents and friends. However, many apprentices' parents and other family members did not take an active role in the program. By comparison, a greater percentage of mentors involved their own family members and friends in activities. Although involvement by mentors' family members and friends did not meet the intended application of a social support network, some strong friendships grew out of experiences shared by mentors' family/friends and apprentices. This was particularly true when those family members or friends were similar in age to the apprentices. Overall, mentors believed they established good relationships with their apprentices' and apprentices' parents, and that they were effective mentors.

Our qualitative evaluation found that volunteers are most likely to be successful mentors if they have high levels of enthusiasm and can relate well to others. However, additional characteristics also are needed (see Appendix B). Some volunteer mentors also were SEC instructors or participated as a leader in the 4-H Sportfishing & Aquatic Resources Education Program (SAREP). Both the SEC and SAREP programs are carefully structured programs in which leaders meet, usually with groups of youths, for 1-3 meetings. The AHP is quite different in that it is much less structured, involves an indefinite number of 1-on-1 meetings, and requires great amounts of self-motivation on the part of the mentor. As a result, very good SEC or SAREP instructors will not always make very good AHP mentors, and vice versa.
Table 10. Social support networks developed by mentors for their apprentices as part of New York’s Apprentice Hunter Program, 1990-93.

<table>
<thead>
<tr>
<th>Percent of mentors who involved the following persons in ≥1 nonhunting activity:</th>
<th>Southeastern Area (n = 13)</th>
<th>West-central Area (n = 16)</th>
</tr>
</thead>
<tbody>
<tr>
<td>apprentices' parents</td>
<td>15.4</td>
<td>37.5</td>
</tr>
<tr>
<td>apprentices' other relatives</td>
<td>0.0</td>
<td>25.0</td>
</tr>
<tr>
<td>apprentices' friends</td>
<td>23.1</td>
<td>18.8</td>
</tr>
<tr>
<td>mentor's family or friends</td>
<td>30.8</td>
<td>50.0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Percent of mentors who involved the following persons in ≥1 hunting activity:</th>
<th>Southeastern Area (n = 13)</th>
<th>West-central Area (n = 16)</th>
</tr>
</thead>
<tbody>
<tr>
<td>apprentices' parents</td>
<td>15.4</td>
<td>6.3</td>
</tr>
<tr>
<td>apprentices' other relatives</td>
<td>0.0</td>
<td>6.3</td>
</tr>
<tr>
<td>apprentices' friends</td>
<td>0.0</td>
<td>18.8</td>
</tr>
<tr>
<td>mentor's family or friends</td>
<td>30.8</td>
<td>62.5</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Percent of mentors who believed they:</th>
<th>Southeastern Area (n = 13)</th>
<th>West-central Area (n = 16)</th>
</tr>
</thead>
<tbody>
<tr>
<td>developed a sense of camaraderie with their apprentices</td>
<td>84.6</td>
<td>100.0</td>
</tr>
<tr>
<td>related well to their apprentices' parents</td>
<td>92.3</td>
<td>87.5</td>
</tr>
<tr>
<td>were effective mentors</td>
<td>100.0</td>
<td>87.5</td>
</tr>
</tbody>
</table>

*Number of mentors interviewed.
Recommendations for Ensuring and Monitoring Subsequent Contacts

- Provide more opportunities for mentors and apprentices from successful pairs to share insights about apprenticeship and social support at mentor training workshops.
- Determine and address the causes of apprentice drop-out and need for rematching.
- Use unpaired mentors before soliciting additional volunteers.
- Use "Coalitions for Youth" and other grass-roots efforts to identify additional youths who meet criteria to participate in the AHP and who can be matched with unpaired mentors.
- If geographic disparity cannot be resolved in other ways, pair multiple mentors with an apprentice or multiple apprentices with a mentor.

Implementation Stage II: Ending the Mentoring Process

A formal ending ceremony was planned for paired mentors and apprentices for 2 reasons. First, mentoring theory suggested that apprentices would reach a point where they believed they had developed sufficiently into hunters, and additional "mentoring" would actually stifle their further growth as hunters. At that point, youths and adults could continue to hunt and otherwise spend time together as friends, but not in dominant/subordinate roles as mentor and apprentice. Second, an ending ceremony would provide a formal demarcation when mentors could become available to be paired to new apprentices.

Actions planned to end the mentoring process.

The formal ending was planned to be a completion or graduation ceremony, possibly in conjunction with a game dinner hosted by a sponsoring sportsmen's club. The ceremony was to be chaired by an official figure although not necessarily a NYSDEC employee. Mentors and graduating apprentices were to attend as a pair, with the apprentices' families in attendance if possible. A certificate of completion and/or appreciation was to be presented to each
pair. The ceremony was to occur as close to the 1-year anniversary date of pairing as possible. Details about the ceremony were to be discussed with representatives from the New York State Conservation Council (NYSDEC 1990:24).

Description and evaluation of 1993-95 efforts for ending the mentoring process.

Certificates of completion (for apprentices) and appreciation (for mentors) were designed and printed by program leaders in the southeastern pilot area. No formal graduation ceremonies or dinners were held. However, some youth were given certificates of completion during other group activities (e.g., pheasant hunts, summer picnics). Lack of an "official" ending process made it difficult to identify when youths had "completed" the program. This greatly complicated data collection and analysis associated with the program outcome evaluation.

The irregular schedule of pair establishment prevented program leaders from planning graduation ceremonies. However, because >30 pairs have been matched for ≥1 year in each pilot area, opportunity exists for holding 1 or more completion ceremonies in each pilot area. Graduation ceremonies could be planned more effectively if other implementation efforts were conducted on a regular schedule. For example, a benefit of regularly-scheduled pairing is to have numerous pairs complete their year-long experience at about the same time—in late winter or early spring. Holding graduation ceremonies in late winter or early spring would be advantageous for several reasons. First, experience has shown that mentors and apprentices are less busy at that time than at other times of the year. Second, with most hunting seasons ending in February, a late winter or early spring graduation ceremony would be a logical
conclusion to the shared hunting experiences of mentors and apprentices. Even if mentors and apprentices decide to continue hunting together, a graduation ceremony in late winter or early spring would give apprentices and mentors time to transform their relationship to something different from a mentor/apprentice pairing by the next hunting season. Finally, holding a graduation ceremony in late winter or early spring would increase the availability of experienced mentors for pairing with new apprentices in the spring.

Recommendations for Ending the Mentoring Process

- Officially recognize and provide a completion ceremony for all pairs who have been matched for ≥1 year.

- Establish a regular schedule of completion ceremonies corresponding roughly to the 1-year anniversaries of each pair’s matching.

Qualitative Assessment of Program Management

Many factors affected the degree to which the various implementation stages were successful. Of particular importance are factors relating to program management, including: NYSDEC Central Office support, NYSDEC Regional administrative support, continuity and tenure of AHP leaders in the pilot areas, work-place constraints, liaison between program leaders and SEC staff, and use of volunteers. Information discussed in this section augments information pertaining to the various stages of implementation described above.
Central Office administration and support

A high degree of coordination existed between Central Office administration and the program leader when the AHP was initiated in the southeast pilot area. The first program leader involved in the pilot was an experienced Regional staff person (the Regional SEC coordinator) who used existing mechanisms for coordination and communication with the Central Office. This coordination was expected to be a key element in successful completion of the program design\(^5\), and in ensuring agreement about the purpose and intended outcome of the AHP.

Expansion of the AHP to the west-central area occurred under different circumstances. Central Office staff made a decision to allow more Regional input and operational management in that pilot area. The Regional administration in the west-central area hired a program leader who was an experienced but seasonal NYSDEC employee. This person had never regularly communicated or coordinated with Central Office administrators. This leader simply lacked awareness of existing communication channels and lacked the experience of the initial program leader in the southeast area. This lack of awareness and experience resulted in little coordination between the AHP in the west-central area, the AHP in the southeast area, and NYSDEC Central Office administration.

Lack of coordination by Central Office administration reduced effectiveness and efficiency of AHP implementation efforts in the west-central area during 1992-93. In particular, the program leader spent much energy trying to increase awareness and support among other Regional staff and

\(^5\)The initial program leader in the southeast pilot area was a member of the team that designed the AHP.
program volunteers for a program the leader knew relatively little about. Several competing ideas emerged among Regional staff and program volunteers about the purpose for the AHP. These competing ideas included: (1) desire of NYSDEC to maintain or increase license sales revenue, (2) desire to assist an important stakeholder group "save their sport," and (3) desire to help youths build on low-level existing interest and become more involved in the outdoors. No consensus existed among staff that any of these ideas is a particularly valid or appropriate concern for a state wildlife agency.

After the program leader in the west-central area gained some experience (i.e., by about 1994), he was more successful in implementing the program. In particular, he was able to focus on the immediate goals of the AHP. He did not get "distracted" by development and maintenance of a Coalition for Youth as occurred in the southeastern area.

**Regional administration and support**

Initially, a low level of support by Regional administration existed in the southeast area although the first program leader in that area had helped design the program. As noted above, the initial program leader was experienced and skilled. That person "had the green light to do whatever was necessary," and the Regional administration followed a "hands off" approach. When turnover occurred in program leadership, no formal Regional support or coordination existed as a foundation. Program implementation suffered because the AHP was considered low priority by the Regional administration. The 4 subsequent program leaders often were asked to take on responsibilities outside of the AHP at the expense of program implementation. These leaders were not able to maintain a high level of priority for the AHP, in part,
because they were inexperienced, temporary staff persons "at the low end of the totem pole."

Conversely, a high level of interest existed within the Regional administration in the west-central area. One Regional administrator participated in the AHP as a trained mentor, and became one of the most successful mentors in terms of developing a social support network for his apprentice. However, lack of experience by the program leader, and slow recognition of special administrative needs by the Regional and Central Office administrators hindered program success in the west-central area.

The 2 Regional administrations seemed to have differing assumptions about the dynamics of hunting retention and participation. Staff associated with both Regional administrations were involved deeply in hunting on personal levels. However, the administration in the southeast area seemed to convey an attitude that a decline in hunter numbers and loss of hunting traditions was inevitable. The administration in the west-central area seemed to believe that something can be done to slow or reverse the decline in hunting participation. Further, the administration in the west-central area seemed to believe that the AHP had merit in simply providing opportunities for individual youths, even if it never led to a measurable increase in participation.

Continuity of program leadership

Lack of continuity of program leadership in the southeast area hindered program success. Each of the 4 subsequent leaders had limited or no experience in DEC, and all were hired as temporary employees. Each had to spend considerable time learning about NYSDEC operations in addition to
learning about the AHP before they could implement it. Lack of continuity precluded development of institutional knowledge and experience about what worked or did not work.

Continuity of program leadership in the west-central area did not ensure program success for a variety of reasons. The AHP already was underway in the southeast area when the pilot was replicated in the west-central area. The west-central program leader tried to learn about the AHP from the leader in the southeast area. However, subsequent leadership turnover in the latter area limited the amount of institutional knowledge and experience available to be used in training. Although several of the program leaders in the southeast area were very capable, their lack of knowledge and experience with both NYSDEC and the AHP resulted in them being frustrated. Several of the leaders said they felt as though, "the blind were leading the blind." The purposeful decision to limit involvement and guidance by Central Office administration (because of a desire to "test" whether various aspects of the AHP could be implemented successfully on the ground) exacerbated this problem and hindered program success. Given the lack of institutional knowledge about the AHP, it is surprising that the leaders did as well as they did.

An important positive aspect of the variability caused by leadership turn-over pertained to program leaders' ability and willingness to use trial and error to determine what worked best in getting complex concepts across to program volunteers. The various leaders did not feel obligated to follow what the previous leader had done because in many cases the new leader simply did not know what had been done before. An important consequence of this kind of variability was that program leaders often did not have the time or recorded data to examine why a particular approach may have succeeded or failed. Then,
when initially successful approaches were retried, they sometimes failed for
unknown reasons. Inconsistency and lack of documentation by program leaders
precluded testing of some important experimental hypotheses and evaluating why
various aspects of program implementation succeeded or failed.

Work-place constraints

Some of the most important factors affecting day-to-day operational
aspects of the AHP were work-place constraints. Program leaders were most
successful in contacting youths and mentors in evenings and on weekends.
However, because program leaders in both pilot areas were temporary employees,
they were restricted in the number of hours they could work per week and in
their access to NYSDEC facilities for evening and weekend telephone calling.
According to the leaders, access to copiers and postage meters was limited as
general policy. Further, little secretarial support was designated to the AHP
(especially during 1992-93), and little was requested by program leaders.
These kinds of problems tended to be more severe in the west-central area than
in the southeast area. To overcome some of these problems, leaders in both
areas attempted to work from their homes as much as possible.

Overall liaison between AHP and SEC program

Initially, the relationship between the SEC program and the AHP was
excellent in the southeast area because the SEC coordinator and AHP leader
were the same person. After that individual's death, a temporary staff person
was hired for the SEC coordinator position and a different temporary staff
person was hired to lead the AHP. Lack of institutional knowledge and
experience and a lesser sense of ownership in the AHP resulted. A mutually
beneficial working relationship between the SEC program and the AHP never really developed.

Liaison between the AHP leader and the SEC program initially was good in the west-central area. The SEC coordinator tried to be helpful in meeting the needs of a fully operational program (i.e., locate as many youths as possible to put through the AHP without being overly concerned about whether they really could benefit from the AHP). When the coordinator became more fully aware of the experimental nature of AHP and of other kinds of support needed, his involvement declined. He believed the kinds of support he could best provide were not needed or desired by the AHP. Over time, the working relationship between the 2 programs diminished, but not to the same extent as in the southeast area.

Use of program volunteers

A few key volunteers stepped forward in both pilot areas, but little effort was directed by program leaders at soliciting and using volunteers. When a few requests were made for volunteers, few persons responded. Reasons for this included: poor communication by program leaders, limited understanding about the AHP by potential volunteers, and lack of information about what roles were available for volunteers.

Through the combination of skill of program leaders and personality of some of the volunteers, greater benefit was received from volunteers in the southeast area. As noted elsewhere in this report, volunteers who stepped forward in the southeast area seemed more willing to work for the good of youths in general. Volunteers who stepped forward in west-central area
focussed more on "doing something for hunting" through the AHP, and seemed to link their assistance to personal recognition.

Qualitative Assessment of the AHP by Apprentices and Mentors

This final section of the program implementation evaluation discusses the AHP from the perspective of those who participated in it. Participating apprentices and mentors were queried by telephone in 1995 about their impressions of the AHP. Apprentices were asked specifically to describe what they thought were some of the best and worst things about the program. Mentors were asked what they personally got out of the program, and what suggestions they had for improving the program and better facilitating their roles in it.

Apprentices

Most youths who participated in the program believed "it was great!" The best aspects of the program generally pertained to youths being able to take advantage of opportunities they simply would not have had without the AHP (Table 11). These included not only opportunities to go afield, but also to learn about hunting from someone who had more hunting experience than anyone else they knew. Also identified were opportunities to hone hunting skills and learn more about hunting safely.

A second set of "best things" involved affiliative aspects of the AHP. Apprentices enjoyed program-sponsored group activities, meeting new people, and having fun with their mentors. Appreciative aspects also were identified. These included spending time outdoors and learning to respect nature.
Table 11. Summary of what participating apprentices said were the best things about New York’s Apprentice Hunter Program.

Opportunities
Would not have been able to hunt without the AHP
Learning about hunting; gaining hunting experience
Being able to hunt with an experienced hunter
Going hunting with someone parents or apprentices trusted
Practicing shooting
Learning how to hunt safely

Affiliative aspects
Taking part in group activities like AHP-sponsored hunts and picnics
Meeting new people; making new friends
Having fun with mentor

Appreciative aspects
Spending time outdoors
Learning to respect nature

Few apprentices identified any "worst things" about the AHP. Among those who did, 2 issues dominated (Table 12). One was an unmet desire for more hunting time. Some apprentices were unable to hunt as many times as they wanted because either they or their mentors were too busy. Others could not hunt at all because they were too young to hunt legally without a licensed adult family member, and no adults in their families hunted.

The second issue pertained to operation of the AHP. Some youths had problems contacting or getting together with their mentors. Others indicated
they may have been paired inappropriately--either because their mentor lived too far away, or because they did not get along with their mentor (e.g., mentor had a "bad attitude" toward the apprentice, or the youth never developed a good relationship with the mentor). Also, some said filling out logbooks was "boring" or "useless."

Table 12. Summary of what participating apprentices said were the worst things about New York's Apprentice Hunter Program.

<table>
<thead>
<tr>
<th>Unmet desires</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not hunting as much as I wanted</td>
</tr>
<tr>
<td>Youngest apprentices can't hunt with mentors if parents</td>
</tr>
<tr>
<td>don't go along</td>
</tr>
<tr>
<td>Program did not last long enough</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Operational issues</th>
</tr>
</thead>
<tbody>
<tr>
<td>Had difficulty contacting or getting together with mentor</td>
</tr>
<tr>
<td>Mentor lived too far away</td>
</tr>
<tr>
<td>Being paired with a stranger</td>
</tr>
<tr>
<td>Mentor had a bad attitude toward the apprentice</td>
</tr>
<tr>
<td>Not enough group activities; group activities too far away</td>
</tr>
<tr>
<td>Filling out logbooks; getting logbooks too late</td>
</tr>
<tr>
<td>Program ended so I have no one to hunt with again</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Other issues</th>
</tr>
</thead>
<tbody>
<tr>
<td>AHP shirts provided at picnics were too big</td>
</tr>
<tr>
<td>Had to get up too early to go hunting</td>
</tr>
</tbody>
</table>
Mentors

Most mentors called the AHP "a very worthwhile program." Mentors said they personally experienced 3 kinds of benefits by participating in the AHP (Table 13). Most enjoyed affiliative benefits. They liked hunting with their apprentices, and some felt proud that their apprentices grew or matured as hunters during their participation in the program.

Many mentors also said they benefitted by knowing they had "done their part" for future generations of hunters. They believed they had passed along to their apprentices some amount of hunting experience, skill, and knowledge. They also believed they had played an important role in "making sure that the tradition of hunting will continue." A few mentors mentioned that they enjoyed management-related benefits. These mentors were proud to have "done their duty" by personally ensuring their apprentices bought hunting licenses.

Several kinds of concerns about the program were raised by mentors (Table 14). Operational issues dominated, like perceived inadequacy of mentor training, lack of assistance from program leaders, too few group activities to build a sense of program identity, and being paired with "uncooperative" or "immature" apprentices. Logistical issues also were identified including, finding a place to target practice or hunt, and locating equipment for youths to use. In addition, time constraints were mentioned. Some apprentices lacked time to hunt or get together with mentors. Also, parents of the youngest apprentices (12-13 year-olds) often lacked time to meet the legal requirement of going hunting with the youths and their mentors.
Table 13. Summary of how mentors benefitted personally from participating in New York's Apprentice Hunter Program.

Affiliative benefits
- Liked hunting with young person
- Enjoyed apprentice's company
- Watched youth grow/mature as a hunter

Future generation benefits
- Passed along hunting knowledge, skill, experience
- Continued tradition of hunting

Management benefits
- Apprentice bought a license
- Apprentices will buy licenses the rest of their lives
<table>
<thead>
<tr>
<th>Operational issues</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mentor training too short; not enough detail</td>
</tr>
<tr>
<td>Program leader unhelpful</td>
</tr>
<tr>
<td>Apprentice uncooperative</td>
</tr>
<tr>
<td>Apprentice not emotionally ready to hunt</td>
</tr>
<tr>
<td>High out-of-pocket expenses for mentors</td>
</tr>
<tr>
<td>Too little interaction with others to develop an AHP spirit or identity</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Logistical issues</th>
</tr>
</thead>
<tbody>
<tr>
<td>Difficult to find shooting facilities</td>
</tr>
<tr>
<td>Difficult to find a place to hunt</td>
</tr>
<tr>
<td>Lack of equipment for apprentices</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Time issues</th>
</tr>
</thead>
<tbody>
<tr>
<td>Apprentice had little time to participate</td>
</tr>
<tr>
<td>Apprentice's parents did not have time to go along to meet legal requirements</td>
</tr>
</tbody>
</table>
Summary of What Worked Best and What Needs to be Improved

Our evaluation provided numerous insights about program implementation successes and shortcomings. At least some level of success was documented for each implementation stage, except ending the mentoring process, for which no activity was implemented. Degree of success for the various stages depended on: (1) what was done, (2) who did it, and (3) when it was done. A summary is presented in Table 15 of the most successful efforts evaluated, who is best suited for accomplishing them, and when they are best accomplished.

Several challenges for increasing opportunities for success remain to be overcome. First, "Coalitions for Youth" need to become more fully operational and evaluated. These coalitions provide untested opportunities for locating additional mentors, identifying potential apprentices outside of SECs, and sponsoring group events. Second, better indicators of previous apprenticeship experience must be developed and incorporated into the screening instruments. Third, screening instruments need to be linked more closely to the SEC exam. Fourth, a clearer understanding of the purpose of the AHP, and additional support for it, are needed among both Regional and Central Office staff.
Table 15. Timeline for most successful implementation of New York’s Apprentice Hunter Program, assuming no changes are made in the timing of when sportsmen’s education courses traditionally are offered.

<table>
<thead>
<tr>
<th>When to act</th>
<th>What to do</th>
<th>Who should do it</th>
</tr>
</thead>
<tbody>
<tr>
<td>August–December</td>
<td>Screen all SEC attenders using enhanced SEC exam forms.</td>
<td>SEC instructors</td>
</tr>
<tr>
<td></td>
<td>Identify potential apprentices using hand-held templates or computer program.</td>
<td>Volunteers</td>
</tr>
<tr>
<td></td>
<td>Identify other potential apprentices who do not attend SECs.</td>
<td>Coalitions for Youth and other grass-roots networks.</td>
</tr>
<tr>
<td>January–March</td>
<td>Recruit mentors, especially husband/wife teams, by: making presentations to specific groups, mailing appeals to targeted groups, and personal contacts.</td>
<td>Program leaders</td>
</tr>
<tr>
<td></td>
<td>Conduct formal &quot;graduation&quot; ceremonies in subsequent years.</td>
<td>Program leaders and volunteers.</td>
</tr>
<tr>
<td>February–March</td>
<td>Train mentors through day-long hands-on workshops using role-playing and testimonials by successful, experienced mentors. Possibly combine with training efforts for other agency-sponsored programs.</td>
<td>Program leaders and experienced mentors</td>
</tr>
<tr>
<td></td>
<td>Invite apprentices via telephone from 5:30–8:00pm on weekdays.</td>
<td>Program leaders and volunteers.</td>
</tr>
<tr>
<td>February–April</td>
<td>Pair mentors and apprentices at group meetings.</td>
<td>Program leaders and volunteers.</td>
</tr>
<tr>
<td>When</td>
<td>What</td>
<td>Who</td>
</tr>
<tr>
<td>--------------------</td>
<td>-------------------------------</td>
<td>-----------------------------------------------</td>
</tr>
<tr>
<td>May-June</td>
<td>Hold group events.</td>
<td>Coalitions for Youth and program leaders</td>
</tr>
<tr>
<td>Aug.-September</td>
<td>Hold additional group events.</td>
<td>Coalitions for Youth and program leaders</td>
</tr>
<tr>
<td>Sept.-November (after initial year)</td>
<td>Hold special AHP hunts.</td>
<td>Volunteers, program leaders, and Coalitions for Youth</td>
</tr>
</tbody>
</table>
PROGRAM OUTCOME EVALUATION

The original plan called for a finite group of youths to be paired with mentors for a set 12-month period (Enck and Decker 1990). The program outcome evaluation was scheduled to be completed 2 years after the end of that well-defined 12-month period. Problems experienced in implementing the pilot AHP resulted in youths being paired for varying amounts of time (12-30 months) during a 3.5 year period. Thus, we conducted the program outcome evaluation at the end of that 3.5 year period, instead of 2 years after completion of the pilot experience for all apprentices.

Program outcome evaluation was assessed by comparing data from 3 groups of youths in both pilot areas.

A treatment group (n = 47) included youths who had been paired with a mentor for ≥1 year.

A control group included a sample of 27 youths from each pilot area (total n = 54) who met criteria for participation in the AHP, but who were not paired with a mentor.

A comparison group included a sample of 27 youths in each pilot area (total n = 54) who were likely to become and continue to be hunters without participating in the AHP (i.e., did not meet the invitation criteria).

Outcome of Decision Criteria

Data used in the program outcome evaluation were collected via telephone interviews. These data relate, in part, to NYSDEC's decision about expanding the AHP statewide. Six decision criteria were established by the team who developed the program plan (NYSDEC 1990:9-10). These criteria pertained to
(1) license-buying behavior of the youths, (2) stage of hunting involvement, (3) mean number of days spent hunting, (4) program cost, (5) degree to which mentors successfully applied desired program elements, and (6) willingness of mentors to be paired again. According to the planning document (NYSDEC 1990:9), "the sum of the 6 must be positive for the AHP to be expanded statewide." Findings associated with the program outcome evaluation are organized by these 6 decision criteria.

First decision criterion: "An increase in the proportion of participants who purchase a hunting license from nearly 0 percent to 50 percent during the two years following the program."

This criterion was based on empirical evidence from Pomerantz and Decker (1986) that few youths who lacked apprenticeship and/or social support for hunting (i.e., youths in treatment and control groups) would purchase a license to hunt after attending an SEC unless they received a programmatic intervention (i.e., treatment). The criterion called for assessing license purchase history 2 years after youths graduated from the program. No graduation ceremonies have been held, but we conducted our assessment so a decision could be made about whether to expand the pilot program statewide. Because 2 years had not passed since youths "completed" the AHP, we examined history of license purchase from the time youths took the SEC through the end of 1994 for all youths who had participated ≥1 year.

Our starting premise (i.e., few youths would buy hunting licenses if they met criteria to participate in the AHP, but did not do so) had to be revised before we could develop and examine any hypotheses about license purchase. Youths in control groups in both pilot areas bought licenses more consistently (Table 16) than expected based on Pomerantz and Decker (1986). This is an important finding in itself, and supports qualitative information
Table 16. History of license purchase by youths since they attended New York State's sportsmen's education course.

<table>
<thead>
<tr>
<th>History of license purchase</th>
<th>Southeastern Area</th>
<th>West-central Area</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Treatment</td>
<td>Control</td>
</tr>
<tr>
<td>Consistent\textsuperscript{a}</td>
<td>6 30.0</td>
<td>10 43.5</td>
</tr>
<tr>
<td>High sporadic\textsuperscript{b}</td>
<td>6 30.0</td>
<td>2 8.7</td>
</tr>
<tr>
<td>Med. Sporadic\textsuperscript{c}</td>
<td>1 5.0</td>
<td>4 17.4</td>
</tr>
<tr>
<td>Low sporadic\textsuperscript{d}</td>
<td>5 25.0</td>
<td>3 13.0</td>
</tr>
<tr>
<td>Dropout\textsuperscript{e}</td>
<td>2 10.0</td>
<td>4 17.4</td>
</tr>
<tr>
<td>Total assess.</td>
<td>20 100.0</td>
<td>23 100.0</td>
</tr>
</tbody>
</table>

\textsuperscript{a}Consistent = purchased a license every year since completing SEC.

\textsuperscript{b}High sporadic = purchased a license >50\% of years since completing SEC.

\textsuperscript{c}Med. sporadic = purchased a license 50\% of years since completing SEC.

\textsuperscript{d}Low sporadic = purchased a license <50\% of years since completing SEC.

\textsuperscript{e}Dropout = never purchased a license after completing SEC.
obtained through telephone calls with youths that many potential apprentices found enough apprenticeship and social support on their own without the AHP to at least be able to go hunting. This finding also supports a recommendation made earlier in this report to develop more restrictive criteria for use in the screening instruments to identify apprentices to invite.

Further, before we could confidently develop and examine hypotheses, we needed to assess license purchase behavior by youths in the comparison groups. We expected those youths to be relatively consistent license purchasers because they had experienced apprenticeship and social support prior to attending an SEC. The data supported that expectation as >80% of youths in comparison groups in both pilot areas purchased a hunting license each year since they attended an SEC (Table 16).

Based on our expectations, we developed 3 hypotheses to examine the first decision criterion:

$H_{1.1}$: youths in treatment groups will be more consistent with respect to license purchase than youths in control groups;

$H_{1.2}$: youths in treatment groups will exhibit similar consistency of license purchase as youths in comparison groups; and

$H_{1.3}$: youths in control groups will be less consistent than youths in comparison groups.

For this first decision criterion to have a positive outcome, youths in treatment groups had to have a more consistent history of license purchase than youths in control groups. Ideally, youths in treatment groups would be as consistent with respect to license purchase as youths in the comparison groups. We compared consistency of license purchase among treatment, control,
and comparison groups using ordinal logistic regression (Agresti 1990:271). This was the most powerful tool available to assess whether differences existed among the groups and also to determine whether location had any effect on consistency (i.e., whether the treatments were different in the 2 areas). We chose an *a priori* level of significance at $P = 0.10$.

The outcome for the first decision criterion was mixed. $H_{1.1}$ was not supported. Youths in treatment groups did not purchase a license to hunt with any greater consistency than youths in control groups ($P = 0.81$, southeast; $P = 0.18$, west-central). Although the patterns of consistency shown in Table 16 may visually look different, we found no statistical effect attributable to different treatments in the 2 areas ($P = 0.25$). That is, even if the treatments operationalized in the 2 areas were different, those differences had no effect on whether youths bought licenses.

$H_{1.2}$ received mixed support. Youths in the southeast treatment group bought licenses with less consistency than youths in the southeast comparison group ($P < 0.01$), but youths in the west-central treatment group bought licenses as consistently as youths in the west-central comparison group ($P = 0.14$). $H_{1.3}$ was supported in both areas. Youths in control groups were less consistent license buyers than youths in comparison groups ($P < 0.01$, southeast; $P = 0.02$, west-central).

**Second decision criterion.**—"Achievement of a 'continuation' stage of hunting adoption by at least 25 percent of the participants 2 years after completion of the pilot program."

This second decision criterion was based on the intention of using application of apprenticeship and social support through the AHP to help bridge youths from "interest" or "trial" stages into the "continuation stage," keeping them from becoming dropouts (i.e., regressing to the "desertion"
stage). We assessed youths' stage of hunting involvement at the time they attended an SEC and again at the end of 1994. Because we considered that youths who attended SECs already had passed from the awareness to the interest stage, possible stages of hunting involvement for this evaluation included: interest, trial, continuation, and cessation/desertion. About 56% of youths in the southeast treatment group moved into the continuation stage of involvement after at least 1 year in the AHP, but only about 11% of youths in the west-central treatment group did so (Table 17).

To examine this criterion further, we compared each youth's stage of hunting involvement at the time he/she attended an SEC with that youth's stage of hunting involvement at the end of 1994 (Table 18). Change in stage of hunting involvement was compared using the Mann-Whitney test (SPSS Inc. 1988). This nonparametric test examined both magnitude and direction of change in stage of hunting involvement resulting from the AHP. We chose an a priori level of significance at $P = 0.10$.

We expected most youths in comparison groups for both pilot areas to be in more advanced stages of involvement compared to youths in other groups when they attended an SEC because youths in comparison groups already experienced both apprenticeship and social support. Although stage of involvement was not used to select youths for participation, previous research showed that youths who had received apprenticeship and social support prior to attending an SEC usually were in higher stages of involvement than those who had not (Purdy and Decker 1986). Data in Table 17 confirmed that youths in comparison groups started out in higher stages of involvement.

Further, we expected that youths in comparison groups would neither progress or regress much in their stage of involvement over time. Because
Table 17. Stage of hunting involvement for youths in treatment, control, and comparison groups, before and after application of New York's Apprentice Hunter Program.

<table>
<thead>
<tr>
<th>Pilot Area</th>
<th>Stage of Hunting Involvement</th>
<th>Treatment Before</th>
<th>Treatment After</th>
<th>Control Before</th>
<th>Control After</th>
<th>Comparison Before</th>
<th>Comparison After</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>%</td>
<td>n</td>
<td>%</td>
<td>n</td>
<td>%</td>
<td>n</td>
</tr>
<tr>
<td>Southeastern</td>
<td>Interest</td>
<td>9 100.0</td>
<td>1   11.1</td>
<td>19 76.0</td>
<td>7   28.0</td>
<td>5    18.5</td>
<td>0   0.0</td>
</tr>
<tr>
<td></td>
<td>Trial</td>
<td>0 0.0</td>
<td>3   33.3</td>
<td>1   4.0</td>
<td>13 52.0</td>
<td>14   51.9</td>
<td>16  59.3</td>
</tr>
<tr>
<td></td>
<td>Continuation</td>
<td>0 0.0</td>
<td>5   55.6</td>
<td>1   4.0</td>
<td>3   12.0</td>
<td>8    29.6</td>
<td>11  40.7</td>
</tr>
<tr>
<td></td>
<td>Desertion</td>
<td>0 0.0</td>
<td>0   0.0</td>
<td>4   16.0</td>
<td>2   8.0</td>
<td>0    0.0</td>
<td>0   0.0</td>
</tr>
<tr>
<td></td>
<td></td>
<td>9 100.0</td>
<td>9   100.0</td>
<td>25 100.0</td>
<td>25 100.0</td>
<td>27   100.0</td>
<td>27 100.0</td>
</tr>
<tr>
<td>West-central</td>
<td>Interest</td>
<td>6 66.7</td>
<td>0   0.0</td>
<td>20 80.0</td>
<td>7   20.0</td>
<td>2    7.4</td>
<td>0   0.0</td>
</tr>
<tr>
<td></td>
<td>Trial</td>
<td>2 22.2</td>
<td>8   88.9</td>
<td>2   8.0</td>
<td>14 56.0</td>
<td>16   59.3</td>
<td>18 66.7</td>
</tr>
<tr>
<td></td>
<td>Continuation</td>
<td>0 0.0</td>
<td>1   11.1</td>
<td>1   4.0</td>
<td>3   12.0</td>
<td>9    33.3</td>
<td>9   33.3</td>
</tr>
<tr>
<td></td>
<td>Desertion</td>
<td>1 11.1</td>
<td>0   0.0</td>
<td>2   8.0</td>
<td>3   12.0</td>
<td>0    0.0</td>
<td>0   0.0</td>
</tr>
<tr>
<td></td>
<td></td>
<td>9 100.0</td>
<td>9   100.0</td>
<td>25 100.0</td>
<td>25 100.0</td>
<td>27   100.0</td>
<td>27 100.0</td>
</tr>
</tbody>
</table>

*a Stage not assessed for 12 additional youths.

*b Stage not assessed for 2 additional youths.

*c Stage not assessed for 27 additional youths.

*d Stage not assessed for 2 additional youths.
Table 18. Change in stage of hunting involvement for youths in the treatment, control, and comparison groups of New York's Apprentice Hunter Program evaluation.

<table>
<thead>
<tr>
<th>Pilot Area</th>
<th>Change in Stage of Involvement</th>
<th>Treatment</th>
<th>Control</th>
<th>Comparison</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>n</td>
<td>%</td>
<td>n</td>
</tr>
<tr>
<td>Southeastern</td>
<td>Progressed 2 stages</td>
<td>5</td>
<td>55.6</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>Progressed 1 stage</td>
<td>3</td>
<td>33.3</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>No change</td>
<td>1</td>
<td>11.1</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td>Regressed 1 stage</td>
<td>0</td>
<td>0.0</td>
<td>2a</td>
</tr>
<tr>
<td></td>
<td></td>
<td>9</td>
<td>100.0</td>
<td>25</td>
</tr>
<tr>
<td>West-central</td>
<td>Progressed 2 stages</td>
<td>2</td>
<td>22.2</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Progressed 1 stage</td>
<td>5</td>
<td>55.6</td>
<td>13</td>
</tr>
<tr>
<td></td>
<td>No change</td>
<td>2</td>
<td>22.2</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>Regressed 1 stage</td>
<td>0</td>
<td>0.0</td>
<td>4b</td>
</tr>
<tr>
<td></td>
<td></td>
<td>9</td>
<td>100.0</td>
<td>25</td>
</tr>
</tbody>
</table>

a Both youths deserted hunting.

b Includes 3 youths who deserted hunting.
they started out in more advanced stages of involvement, they had little opportunity to progress. We did not expect them to regress because they had received apprenticeship and social support prior to attending an SEC. As expected, most youths in comparison groups experienced no change in their stage of hunting involvement (Table 18).

The greatest changes were hypothesized to occur among youths in treatment groups. For this second decision criterion to have a positive outcome, youths experiencing apprenticeship and social support through the AHP (i.e., treatment group) must progress more in their stage of hunting involvement than youths who did not experience apprenticeship and social support (i.e., control group). We hypothesized:

$H_{2.1}$: youths in treatment groups will progress more stages (i.e., toward the "continuation" stage) than youths in control groups.

Mixed results were obtained, with greater success experienced in the southeastern area. In that area, youths in the treatment group progressed further than youths in either the control (Mann-Whitney test, $z = -2.10, P = 0.04$) or comparison ($z = -3.25, P < 0.01$) groups. Youths in control and comparison groups were similar with respect to changes in stage of involvement ($z = -1.85, P = 0.06$). However, in the west-central area, youths in the treatment and control groups changed similar amounts ($z = -1.07, P = 0.29$). Both treatment ($z = -2.82, P = 0.05$) and control ($z = -2.28, P = 0.02$) groups progressed further than the comparison group. Because of these mixed results, $H_{2.1}$ was neither supported nor refuted.

These mixed results raise the possibility that measurement of stage of hunting involvement was flawed. To assess this possibility, we developed 2
independent tests of our measurement of stage of hunting involvement. First, we compared apprentices' measured stage of involvement with their self-assessment of their involvement in hunting (Table 19). Second, we compared measured stage of involvement with apprentices' intentions to hunt in the next hunting season (Table 20).

<table>
<thead>
<tr>
<th>Table 19. Comparison of measured stage of hunting involvement with apprentices' self-assessment of hunting involvement.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Self-assessment of involvement</strong></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>I don't hunt</td>
</tr>
<tr>
<td>I hunt occasionally, and am not an avid hunter</td>
</tr>
<tr>
<td>I hunt only occasionally, but am an avid hunter</td>
</tr>
<tr>
<td>I hunt a lot, and hunting is an important part of my life</td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>
Table 20. Comparison of measured stage of hunting involvement with apprentices' intention to hunt in the next hunting season.

<table>
<thead>
<tr>
<th>Intention to hunt in next season</th>
<th>Measured stage of involvement</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Desertion</td>
</tr>
<tr>
<td>I will not hunt</td>
<td>4</td>
</tr>
<tr>
<td>I am unsure if I will hunt</td>
<td>0</td>
</tr>
<tr>
<td>I will hunt</td>
<td>1</td>
</tr>
</tbody>
</table>

Our measurement of apprentices' stage of hunting involvement generally was consistent with the apprentices' self-assessment of involvement. The reader is cautioned that we would not expect exact convergence between measured stage of involvement and either apprentice's self-assessment of their future intentions. Frequency (i.e., occasionally, a lot), avidity, and intentions do not equate exactly to stage of involvement. However, for our measure of involvement to be useful, we would expect a pattern to be evident in the data. The expected pattern was found in the data. Apprentices in higher measured stages of involvement indicated they were more likely to be avid hunters and believed they "hunted a lot" compared to those in lower measured stages of involvement. Also, apprentices in higher stages of
involvement were more likely to be sure of their future hunting intentions, and were most likely to say they would hunt during the next hunting season.

Third decision criterion. -- "An increase in the mean days of hunting by the apprenticeship and full support treatment groups, as an additive improvement over a control."

This third criterion was based on findings from previous research by Purdy and Decker (1986) and Purdy et al. (1989). They reported that persons who had not received apprenticeship and social support prior to attending an SEC would hunt fewer days than those who had. Thus, we expected youths in comparison groups to hunt a relatively high number of days because they had experienced both apprenticeship and social support prior to attending an SEC. We hypothesized:

\( H_{3,1}: \) youths in treatment groups will hunt more days than youths in control groups;

\( H_{3,2}: \) youths in treatment groups will hunt a similar number of days as youths in comparison groups; and

\( H_{3,3}: \) youths in control groups will hunt fewer days than youths in comparison groups.

Admittedly, these hypotheses could not be examined under "perfect" conditions because youths in treatment groups still were participating in the AHP during 1992-94. Apprentices may have taken advantage of the program to go hunting more often than they would have after their participation ended. Interviewed youths indicated they sometimes made the decision to go hunting before a mentor suggested it. On other occasions youths went hunting at the suggestion of a mentor. We do not know the degree to which encouragement by mentors "biased" decisions by youths to go hunting.
We used one-way analysis of variance (ANOVA) of data pooled between pilot areas to examine our hypotheses (SPSS, Inc. 1988)\textsuperscript{6}. Analyses were conducted for each year during 1992-94. Youths in the 3 groups hunted for a widely varying number of days in all years. Because unequal variances among groups violated an important condition for the use of ANOVA, we transformed the data using a square root transformation. As in examining the previous criteria, we chose an \textit{a priori} level of significance at $P = 0.10$.

Our hypotheses received mixed support. $H_{5,1}$ was not supported in any year; youths in pooled treatment groups hunted no more days than youths in pooled control groups (Table 21). $H_{5,2}$ was supported in all years. Youths in pooled treatment groups hunted a similar number of days as youths in comparison groups in all years (Table 21). $H_{5,3}$ was supported in all years as youths in pooled control groups hunted a fewer number of days than youths in comparison groups (Table 21).

\textbf{Fourth decision criterion.}—"The man hours and dollars spent in implementing the pilot AHP will be determined for the Department of Environmental Conservation, collaborating organizations, and individual master hunters [i.e., mentors]. The man hours and dollars spent by DEC will be compared to the license revenue generated by the AHP participants, as one of several decision criteria. It is recognized that it may take several years to show a positive cost-benefit ratio."

The annual cost of implementing the AHP in each of the pilot areas was $30,000-32,000 during the period 1992-94.\textsuperscript{7} License revenue generated from the AHP for each year in that period was calculated by summing the number of

\textsuperscript{6}Data were pooled across areas for this analysis to increase sample sizes to a level appropriate for conducting analysis of variance. We did not pool data across years because we would have violated assumptions of independence (i.e., some apprentices, but not all, would have been included more than once because they hunted in multiple years).

\textsuperscript{7} In 1992 in the west-central area, cost of the AHP only approximated $15,000 because implementation did not start until June.
Table 21. Mean number of days hunted by youths in treatment, control, and comparison groups during 1992-94.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>x</td>
<td>S.E.</td>
<td>n</td>
<td>x</td>
<td>S.E.</td>
</tr>
<tr>
<td>Control</td>
<td>16</td>
<td>7.0</td>
<td>2.0</td>
<td>25</td>
<td>6.6</td>
<td>1.7</td>
</tr>
<tr>
<td>Treatment</td>
<td>26</td>
<td>9.2</td>
<td>1.8</td>
<td>33</td>
<td>10.9</td>
<td>2.2</td>
</tr>
<tr>
<td>Comparison</td>
<td>12</td>
<td>17.5</td>
<td>4.3</td>
<td>27</td>
<td>13.4</td>
<td>1.8</td>
</tr>
</tbody>
</table>

*Columns of x's indicate group means that are not different at $P = 0.10$.

...youths who (a) were matched in or prior to that year, and (b) bought a license in that year (Table 22). The cumulative number of youths who were matched increases from 1992-94 in Table 22 because additional youths were paired over time. The number of matched youths who purchased a license in succeeding years did not necessarily increase because matched youths did not necessarily purchase a license. Because of the potential for recall bias, interviewed youths were not asked what license type(s) they purchased in a given year. For purposes of this analysis, youths were assumed to purchase a license to hunt small game (annual cost = $11). (NOTE: If a substantial number of apprentices bought a sportsmen's license (annual cost = $31), the number of years it would take to see a net economic benefit would be reduced greatly.)
Table 22. Number of youths in treatment groups who purchased a license to
hunt in 1992 through 1994, and amount of license revenue generated.

<table>
<thead>
<tr>
<th>Area and Year</th>
<th>Cumulative number of youths in treatment group</th>
<th>Number of youths in treatment group who bought a license</th>
<th>License revenue generated*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Southeastern</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1992</td>
<td>18</td>
<td>14</td>
<td>$154</td>
</tr>
<tr>
<td>1993</td>
<td>20</td>
<td>13</td>
<td>$143</td>
</tr>
<tr>
<td>1994</td>
<td>21</td>
<td>8</td>
<td>$ 88</td>
</tr>
<tr>
<td>West-central</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1992</td>
<td>19</td>
<td>14</td>
<td>$154</td>
</tr>
<tr>
<td>1993</td>
<td>30</td>
<td>24</td>
<td>$264</td>
</tr>
<tr>
<td>1994</td>
<td>36</td>
<td>21</td>
<td>$231</td>
</tr>
</tbody>
</table>

*Assumes youths purchase small game license costing $11/year. Greater revenue would be generated if apprentices bought a sportsmen's license costing $31/year instead of a small game license.

The small number of youths who were part of the pilot efforts could not be expected to recoup the cost of implementing the program. Thus, no useful purpose existed for examining an hypothesis about license revenue from AHP participants showing a positive cost-benefit analysis. The data in Table 22 are presented only to reflect the way in which the fourth decision criterion was worded. A more practical assessment is to examine the impact of a fully
operational program in each area where cost of implementation would remain about $32,000 per year.

Approximately 3,000 persons pass the SEC exam in each of the pilot areas in a given year, and about 50% (i.e., 1,500) are youths (NYSDEC, unpubl. data). Of those, a minimum of 40% (i.e., 600) may meet criteria to participate in the AHP (range 41.5-52.7% from Table 4). A minimum of 35% of those youths (i.e., 210) would agree to participate (range 34.8-41.5% from Table 6). If 60% (i.e., 126) purchased an $11 license to hunt small game most years (range 60-71% for high sporadic and consistent purchasers from Table 16), AHP participants could generate about $1,386 in license revenue every year in each pilot area.

Without data to the contrary, we assume that a similar percentage of AHP graduates would purchase a license in succeeding years. In any given year, license revenue generated by the AHP would be accounted for by licenses bought by that year's AHP graduates and licenses bought by all previous AHP graduates. It would take about 24 years before annual license revenue generated from AHP graduates ($33,264) would exceed annual implementation cost of $32,000. Given the numbers of youths taking the SEC as well as the percentages meeting criteria for participating in the AHP, agreeing to participate, and buying a license, it would take about 46 years before accumulated license revenue would exceed accumulated implementation costs (Table 23).

The cost benefits are obvious of doing a better at implementing the AHP. The annual investment could be recouped in 2 years if costs were contained to pilot levels with increased use of volunteers and program visibility, all invited youths agreed to participate, all apprentices were properly served,
Table 23. Estimates of average accumulated implementation costs and license revenue generated over time for any 1 of DEC's administrative regions fully implementing* New York's Apprentice Hunter Program (in 1996 dollars).

<table>
<thead>
<tr>
<th>Year</th>
<th>Accumulated Implementation Costs</th>
<th>Accumulated License Revenue Generated</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>$ 32,000</td>
<td>$ 1,386</td>
</tr>
<tr>
<td>10</td>
<td>320,000</td>
<td>76,230</td>
</tr>
<tr>
<td>20</td>
<td>640,000</td>
<td>291,060</td>
</tr>
<tr>
<td>30</td>
<td>960,000</td>
<td>644,490</td>
</tr>
<tr>
<td>40</td>
<td>1,280,000</td>
<td>1,136,520</td>
</tr>
<tr>
<td>45</td>
<td>1,440,000</td>
<td>1,434,510</td>
</tr>
<tr>
<td>46</td>
<td>1,472,000</td>
<td>1,498,266</td>
</tr>
<tr>
<td>47</td>
<td>1,504,000</td>
<td>1,563,408</td>
</tr>
<tr>
<td>48</td>
<td>1,536,000</td>
<td>1,629,936</td>
</tr>
<tr>
<td>49</td>
<td>1,568,000</td>
<td>1,697,850</td>
</tr>
<tr>
<td>50</td>
<td>1,600,000</td>
<td>1,767,150</td>
</tr>
</tbody>
</table>

*Assumptions: 1. 3,000 persons pass SEC exam in administrative region/year.
2. 50% are youths.
3. 40% of youths meet criteria to participate (i.e., lack apprenticeship and/or social support for hunting).
4. 35% of youths who meet criteria agree to participate, and do so.
5. 60% of participants purchase an $11 small-game hunting license in a given year.
and all of them subsequently bought sportsmen licenses ($31 annually). That outcome is unlikely, but the probable outcome is somewhere the conservative estimate shown above (i.e., assuming apprentices buy only an $11 small game license each year) and "total success."

One reason for this is that over time, the return on the investment will be amplified as youths who complete the AHP become initiators and supporters of additional persons who otherwise would not become hunters (Enck 1993). If AHP graduates can successfully provide apprenticeship and social support to those other persons, the others will not have to participate in the AHP. Nonetheless, they will have benefitted from the AHP indirectly, and at least some of them will purchase a license in the future.

Another extended benefit uncovered by program leaders was that parents of potential apprentices became more enthusiastic about further developing their children’s interest in hunting. According to program leaders who spoke to many of the parents, some parents seemed not to realize that their child may need social support and apprenticeship experience to become a competent hunter. When program leaders invited potential apprentices to participate, the parents became more aware of their children’s interests and needs relative to hunting.

Fifth decision criterion—"The extent that volunteers who are selected to provide apprenticeship but actually provide a level of social support will be measured by examining log books each master hunter [mentor] will keep. The costs associated with training master hunters [mentors] to provide apprenticeship vs. apprenticeship and social support will be determined and weighed against the degree to which social support networks develop without special training."

The original plan called for 2 treatment types to be offered: (1) apprenticeship experience only, and (2) apprenticeship experience with social support (NYSDEC 1990). For a variety of reasons described earlier in this
document, program leaders and NYSDEC central office administrators made a practical decision after the pilot was initiated to provide only 1 kind of training workshop for mentors. Thus, all mentors were to provide combined apprenticeship experience with social support. No hypotheses were developed or examined for this decision criterion.

In the southeast pilot area, many mentors were unable to provide the full treatment of apprenticeship experience with social support. Exit interviews with 13 mentors and their apprentices showed that efforts to provide apprenticeship experience were more successful than efforts to develop social support linkages. Most mentors involved youths in apprenticeship activities like nonhunting experiences (100%), hunting trips (100%), activity planning (only 7.7%), controlled shooting events (92.3%), seeing game harvested (61.5%), and seeing game cleaned (61.5%).

Social support networks possibly could have been built into many of these activities. Indeed, about one-third of mentors in the southeastern area involved their apprentices' friends or family members in nonhunting activities (38.5%), but even fewer involved these persons in hunting activities (15.4%). About one-third of mentors also involved their own friends or family members in nonhunting activities (30.8%) and hunts (30.8%). Many mentors believed they developed a sense of camaraderie with their apprentices (84.6%), and helped apprentices' family members become more supportive of the youths' hunting interests (92.3%). Although most mentors believed they were able to relate well to their apprentices and their apprentices' families, we are not sure those self-assessments reflect development of supportive social support linkages for the youths.
Data from exit interviews with 16 mentors and their apprentices in the west-central pilot area confirm the difficulty of providing the full treatment of apprenticeship experiences with social support. As in the other pilot area, most mentors involved their youths in apprenticeship experiences such as nonhunting activities (100%), hunting trips (87.5%), planning of activities (37.5%), controlled shooting activities (87.5%), seeing game harvested (68.8%), and seeing game cleaned (68.8%).

A somewhat higher percentage of mentors in the west-central area compared to the southeast area engaged their apprentices in the building of social support networks. One-third to one-half of mentors involved apprentices' friends or family members in hunts (31.3%) or nonhunting activities (50.0%). One-half or more of the mentors involved their own friends or family members in hunts (50.0%) or nonhunting activities (56.3%). Most mentors in the west-central area believed they developed a sense of camaraderie with their apprentice (100%), and helped their apprentices' family members become more supportive of the youths' hunting interests (87.5%).

**Sixth decision criterion.**—"Willingness of 75% of the master hunters and the sponsoring organizations to repeat involvement in a similar program."

The willingness of trained mentors to continue in the program and be paired with additional apprentices over time may have an impact on both program cost and success. Workshops to train mentors involve a considerable time and dollar cost to program leaders. In addition, 1 of the most important yet difficult-to-achieve elements of the AHP is training of mentors so they understand their role in the program and understand what is meant by the concepts of apprenticeship and social support. If most mentors agree to be rematched over time, fewer new mentors may need to be trained.
Perhaps more important is the experience that these mentors can bring to the program. As mentors are involved with additional apprentices, they likely will learn what apprenticeship and social support-building efforts work through trial and error, repetition, and further interaction with other mentors. Additional efforts are needed by program leaders to facilitate interaction and networking by mentors. Some mentors seem more successful than others at providing the full treatment to apprentices. These successful mentors should be used as role models for both less successful and new mentors.

The need for mentors to be rematched also is a practical consideration. The criterion that 75% agree to do so is not based on a theoretical foundation. Thus, no hypotheses were developed or examined for this criterion. Exit interviews with mentors in both pilot areas found that a high percentage were willing to be rematched (Table 24).

Table 24. Number and percentage of mentors participating in New York's Apprentice Hunter Program who said they would be willing to be paired again, and who said they would be willing to be paired with multiple apprentices.

<table>
<thead>
<tr>
<th>Pilot Area</th>
<th>Mentors interviewed</th>
<th>Mentors willing to be rematched</th>
<th>Mentors willing to be rematched and to be paired with multiple apprentices</th>
</tr>
</thead>
<tbody>
<tr>
<td>Southeast</td>
<td>13</td>
<td>12</td>
<td>6</td>
</tr>
<tr>
<td>West-central</td>
<td>16</td>
<td>14</td>
<td>5</td>
</tr>
</tbody>
</table>

$\text{Percentage} = \frac{\text{Number of Mentors willing to be rematched}}{\text{Total Mentors interviewed}} \times 100$
Some mentors have the skills and time to accommodate more than 1 apprentice at a time. Evaluation findings suggested that likelihood of successful program outcome for an apprentice was increased if a second apprentice was added some months after the original apprentice. As noted previously, that practice has several positive characteristics associated with it. It facilitates and stimulates development of a social support network among the apprentices, and enhances opportunities for apprentices to be exposed to supportive family members and friends of the other apprentice. The practice provides an opportunity for the first apprentice to "take the other apprentice under his wing" and to develop confidence about hunting. Further, it provides the second apprentice with a same-age, slightly more experienced "buddy" which enhances social support for hunting for both youths.

The potential merits of this practice largely remain untested. However, based on moral and cognitive development theory (see Pomerantz and Decker 1986), we believe this practice may be most successful for older teens who may look to same-age friends more so than "authoritative" adults for ideas about hunting. Data from exit interviews shows that less than one-half of mentors who were willing to be rematched said they also would be willing to be paired with 2 apprentices at a time under the current program structure (Table 24).

**Summary of decision criteria.**—NYSDEC decision makers will determine whether to expand the pilot AHP statewide at the conclusion of this evaluation. That decision will be based, in part, on the outcome of the 6 decision criteria discussed above. According to the planning document for the AHP, "the sum of the 6 must be positive for the program to be expanded statewide" (NYSDEC 1990:9). The first 3 criteria pertain to theoretical
considerations. In particular, they address the question: Is it possible to successfully apply the theoretical concepts of apprenticeship and social support programmatically? The brief answer is that it is very difficult to programmatically replicate the "natural occurrences" of apprenticeship and social support that exist for most persons who become hunters in "traditional" ways. Some mentors, because of their personal qualities, will be successful at facilitating these "natural occurrences" whereas others probably never will be able to do so even with training.

The last 3 criteria pertain to practical considerations. Can the program be implemented in a cost-effective manner? No, in the short-term if current implementation actions are continued. However, cost-effectiveness can be enhanced if implementation is improved in ways described throughout this report. Can mentors facilitate development of social support linkages without additional training? Existing training efforts were not very successful at helping mentors understand the concept of social support. However, many mentors were able to operationalize some level of this concept without understanding it very well. Are enough mentors willing to be rematched to reduce program cost and increase the potential for mentor experience to impact the program positively over time? A very high percentage of trained mentors are willing to be rematched, and one-third to one-half are willing to be paired with multiple apprentices.

Table 25 has been prepared to assist decision makers. It shows each criterion, hypotheses developed and explored for the 3 theoretical-based criteria, outcome of examining those hypotheses, and outcome for each criterion.
Table 25. Outcome of decision criteria vis-a-vis expansion of New York’s pilot Apprentice Hunter Program.

<table>
<thead>
<tr>
<th>Decision Criteria</th>
<th>Outcome of Decision Criterion</th>
<th>Hypotheses</th>
<th>Hypotheses Supported?</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. An increase in the proportion of participants who purchase a hunting license from nearly 0% to 50% during the 2 years following the program.</td>
<td>Negative in southeast Positive in west-central</td>
<td>1. Youths in treatment groups will be more consistent with respect to license purchase than youths in control groups.</td>
<td>1. No.</td>
</tr>
<tr>
<td>2. Achievement of a continuation stage of hunting adoption by at least 25% of the participants 2 years after completion of the pilot program.</td>
<td>Positive in southeast Negative in west-central</td>
<td>2. Youths in treatment groups will exhibit similar consistency of license purchase as youths in comparison groups.</td>
<td>2. Yes.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3. Youths in control groups will be less consistent than youths in comparison groups.</td>
<td>3. Yes.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1. Youths in treatment groups will progress more stages (i.e., towards the continuation stage) than youths in control groups.</td>
<td>1. Yes, in southeastern area. No, in west-central area.</td>
</tr>
<tr>
<td>Decision Criteria</td>
<td>Outcome of Decision Criterion</td>
<td>Hypotheses</td>
<td>Hypotheses Supported?</td>
</tr>
<tr>
<td>-------------------</td>
<td>-------------------------------</td>
<td>------------------------------------------------</td>
<td>-----------------------</td>
</tr>
<tr>
<td>3. An increase in the mean days of hunting by the treatment groups, as an additive improvement over a control.</td>
<td>Negative for each year during 1992-94.</td>
<td>1. Youths in treatment groups will hunt more days than youths in control groups.</td>
<td>1. No.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2. Youths in treatment groups will hunt a similar number of days as youths in comparison groups.</td>
<td>2. Yes.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3. Youths in control groups will hunt fewer days than youths in comparison groups.</td>
<td>3. Yes.</td>
</tr>
<tr>
<td>4. The man hours and dollars spent by DEC will be compared to the license revenue generated by AHP participants.</td>
<td>With assumptions used, negative on annual basis until year 24. Negative for accumulated revenue until year 46.</td>
<td>None.</td>
<td>Not Applicable</td>
</tr>
<tr>
<td>Decision Criteria</td>
<td>Outcome of Decision Criterion</td>
<td>Hypotheses</td>
<td>Hypotheses Supported?</td>
</tr>
<tr>
<td>-------------------</td>
<td>-------------------------------</td>
<td>------------</td>
<td>-----------------------</td>
</tr>
<tr>
<td>5. The extent that volunteers who are selected to provide apprenticeship but actually provide a level of social support will be measured by examining log books each mentor will keep. The costs associated with training mentors to provide apprenticeship vs. social support will be determined and weighed against the degree to which social support networks develop without special training.</td>
<td>One-third to one-half of mentors facilitated development of social support networks when trained to do so.</td>
<td>None.</td>
<td>Not applicable.</td>
</tr>
<tr>
<td>6. Willingness of 75% of the mentors and sponsoring organizations to repeat involvement in a similar program.</td>
<td>Positive.</td>
<td>None.</td>
<td>Not Applicable.</td>
</tr>
</tbody>
</table>
CONCLUSIONS

Our evaluation of the AHP indicates there is no easy "one-size-fits-all" solution to the challenge of increasing hunting retention. We believe agency-sponsored programs can work for some, but not all, youths who have unmet interests in hunting. The various ways that persons are recruited into hunting and the conditions that influence whether they are retained are very difficult to recreate programmatically. Nonetheless, efforts like the AHP can provide opportunities for youths to enrich their hunting involvement by developing additional skills and experiencing social settings that are supportive of their hunting interest.

The AHP has the potential to benefit hundreds of youths annually who otherwise would not act on their interest in hunting. Even success of that magnitude will not reverse the declining trend in hunting participation. Declining trends in participation are a result of behavior patterns occurring over the last two decades. Changes in the retention of graduates from SECs will not influence very quickly total number of participants or the amount they participate.

One reason for this is the dynamic nature of hunting participation. In New York, about one-half of persons who complete an SEC consistently purchase a hunting license year-to-year, about one-third purchase hunting licenses only sporadically, and the remainder either drop out after a short time or never start hunting (Purdy et al. 1985, 1989). The AHP is aimed at potential dropouts and those who never start. It is not likely to reduce sporadic behavior.

Another reason that agency-sponsored retention programs like the AHP may not increase participation is that programs implemented to-date have not been
able to replicate easily the range of conditions that produce the family-initiated, experience-rich "traditional hunters" (Decker and Mattfeld 1988) who are most likely to be long-term participants. "Traditional hunters" are initiated into hunting through local hunting cultures that both produce and are held together by shared beliefs about appropriate reasons for hunting, kinds of satisfactions sought from hunting, and in general, what it means to be a hunter. Each local hunting culture likely succeeds in developing hunting interest in youths and helping the youths act on that interest because youths develop their beliefs about hunting largely through interaction with socially important adults who reinforce hunting interest in the community's youths.

Through qualitative aspects of our evaluation, we observed that apprentices and mentors had various ideas about motivations for hunting, what satisfactions they sought, and what they thought hunting was all about. In those cases in which apprentices were matched with mentors who seemed to share those ideas, the apprentices responded positively to the mentors' efforts and the interaction succeeded. When apprentices were matched with mentors who did not seem to share their ideas about some of the important elements of hunting, interactions were less successful. We also found that agency-sponsored training of mentors was most effective when it provided mentors with support that was consistent with their own notion of what a hunter is, rather than trying to train mentors to be something they are not.

Further, the kinds of programmatic assistance that may be appropriate for state wildlife management agencies to provide youths differ from those that may be appropriate for other groups or individuals to provide. For example, some youths seem to have difficulty developing a mentoring relationship with nonfamily hunters, but others seem to respond quickly to
efforts of trained strangers to provide social support and apprenticeship experiences. By identifying the kinds of assistance that should and could be provided by various groups and individuals, the AHP could be more efficient and effective.

RECOMMENDATIONS FOR THE FUTURE

We believe that various benefits associated with the AHP can be enhanced by following several general recommendations as described below. Specific recommendations associated with each implementation stage are listed in Appendix C.

Recognize Shortcomings Associated with the Design of the AHP

Over the years since the AHP was designed, some important assumptions about potential apprentices have been examined and may need to be reconsidered. By 1990, only one-half as many persons were attending SECs annually as in 1978. In addition, the proportion of persons who attend SECs and meet criteria for invitation to participate in the AHP is smaller now compared to the late 1970s. Thus, a fully operational AHP relying on selection of apprentices through SECs has the potential of identifying far fewer youths who meet criteria to participate than originally expected.

There is a temptation to emphasize identification of these youths (and adults) outside of SECs. This temptation is based on the intriguing question: "What happened to SEC attendees in the late 1970s who met criteria for participating in the AHP, but who seemed to have stopped coming to SECs by the early 1990s?" Our evaluation provides no insights about these persons. The relatively large percentage of participating youths who self-selected and
asked to join the AHP "from off the street" suggest that a large number of apprentices who meet participation criteria might be identified through mechanisms outside of SECs. However, most of those youth "from off the street" already had been certified through SECs, but screening instruments were not handed out in their courses. Thus, the merit of emphasizing identification of these youths outside of SECs remains unknown although program leaders and the Central Office coordinator still find the idea appealing. If this approach is taken, the focus of the AHP possibly will shift from hunter retention to hunter recruitment. It may depend on whether an indicator of hunting interest other than attendance at an SEC can be developed.

Another shortcoming of the program design is that it was premised on the assumption that youths who did not previously have apprenticeship experience and/or social support would not buy a license or go hunting. Some youths who lacked 1 or both these key elements bought licenses and went hunting. Perhaps measurable indicators of apprenticeship and social support that seemed to work well in identifying youths who met participation criteria in the late 1970s no longer worked well in the 1990s. Alternatively, some youths who had not experienced apprenticeship and/or social support prior to attending SECs may have found opportunities to experience these key elements outside of the AHP.

Develop More Realistic Goals and Expectations

An important, but not previously examined, question relating to the AHP pertains to the goals and expectations that program designers and leaders had for the mentoring process associated with the AHP. One of the authors believes that unstated goals and expectations involved a desire to "turn out"
new hunters who share the same kind of stewardship and conservation ethic that was perceived to be held by "traditional," long-term hunters. These traditional hunters are produced through sociocultural mechanisms that instill a heightened sense of awareness and familiarity about hunting (Decker and Mattfeld 1988). Traditional hunters express their hunting culture through attitudes and behaviors about appropriate ways to interact with wildlife and its habitats.

It seems to be very difficult to duplicate in an agency program the conditions necessary to "turn out" culturally active hunters. It is more realistic to expect to help youth (and adults) to go hunting who normally would not have the opportunity to do so. Thus, a need exists to differentiate between recreationally active participants and culturally active participants as a measure of mentoring success.

Mentoring programs, like the AHP, that are based on the application of apprenticeship experiences and social support for hunting should not be expected to dramatically increase license sales. Such programs are best suited for enriching the hunting experiences as well as broadening and solidifying the set of motivations youths have for participating in hunting. Although these are likely to be reflected in consistent license purchases, progression of an individual to the continuation stage of hunting adoption should not be confused with narrow definitions of year-to-year participation (i.e., license buying behavior).

Concentrate on What is Possible Programmatically

Initially, use of volunteers was limited because we desired to minimize experimental error associated with the evaluation. However, NYSDEC is faced
now more than ever with the realities of staff and budget reductions. Continued reliance on use of agency staff who have many competing priorities likely diminishes opportunities for program success. Our experiences with the AHP suggest that volunteers can provide new and varied opportunities for youths to build on their interests in hunting and to get out in the field.

Even with extensive training, volunteers may never be able to apply rigorously defined concepts of apprenticeship and social support. However, they can provide youths with opportunities they otherwise would not have. Some tangible and intangible benefits likely can be gained by allowing adult volunteers to apply their own versions of the key concepts. In particular, they can encourage youths to buy hunting licenses and to go afield at least a few times a year. Only a limited amount of "true mentoring" occurred, so the importance of formally ending the mentoring process probably is slight. Adult volunteers mostly provided opportunity, so why end the opportunity?

Recognize Consequences of Program Successes

Several important consequences may result from a successful AHP. One positive consequence may be recognition among sportmen's groups that New York is a national leader in the preservation of "the hunting heritage" (Stephens 1992). To date, 4 Hunting Heritage Symposia have been held in different parts of the country to increase awareness and understanding of the nation's heritage and traditions related to hunting. Numerous programs have been implemented by nearly every state wildlife agency and many nongovernmental organizations in an attempt to increase recognition of and preserve that heritage. However, little evidence exists to suggest that those programs have been measurably successful. Any agency or organization that implements a
successful program likely would receive high recognition from other groups which are interested in preserving the hunting heritage.

Positive consequences for NYSDEC also are possible outside of the "traditional" set of sportsmen's groups. Further development and expansion of "Coalitions for Youth" as mechanisms for attracting interested youths from outside of SECs, recruiting mentors, and supplementing AHP activities probably would occur in association with a successful AHP. Many of the youth- and conservation-related groups which participated in the coalition in the southeastern pilot area were groups with which NYSDEC has not worked closely before. Thus, the formation of similar coalitions in other parts of the state represent an opportunity for NYSDEC to forge or strengthen linkages with important, potential conservation allies.

A potential, negative consequence of a successful AHP could be the development of expectations among various sportsmen's groups that scarce agency resources will be targeted permanently at hunter retention. Changes likely will occur in the future with respect to public demands for agency-sponsored fish and wildlife programs and services. Indeed, this is almost a certainty if the "Coalitions for Youth" develop further and expand to other parts of the state. New relationships among coalition groups and NYSDEC likely will result in demands by coalition member groups for additional or new programs and services from the wildlife agency. NYSDEC may find it difficult to address those demands because politically strong sportsmen's groups may expect specific funding of the AHP to continue indefinitely.

Other unexpected, negative or positive consequences may occur as a result of AHP success. As AHP apprentices are retained in the population of hunters, their ideas about what hunting is all about and who they are as
hunters (i.e., their identities as hunters) likely will change and/or become more fully developed. Enck (1996) found that a broad spectrum of deer hunters' identities exist in New York. Which kinds of hunters' identities might be produced through the AHP? What kinds of expectations will hunters have who are produced through the program? Are the types of hunters produced the ones desired by those who designed and implemented the AHP, desired by sportsmen supporters of the program, or those desired by society? These kinds of questions are not answerable from our evaluation findings, and may represent either positive or negative consequences.
Need

A need exists to develop criteria on which to base the program implementation evaluation for the Apprentice Hunter Program (AHP). In particular, a mechanism is needed to evaluate whether mentors have adequately met their responsibilities in providing the "treatments" of apprenticeship and social support.

Apprenticeship is the easier of the 2 treatment concepts to operationalize and evaluate. Previous HDRU studies (e.g., Decker et al. 1984, Purdy et al. 1985, Purdy and Decker 1986) found that individuals were more likely to solidify their interest in hunting and become committed hunters if they had experienced particular types of pre-hunting activities. These activities included: shooting a firearm, seeking information about hunting, eating wild game, accompanying others afield, sharing hunting stories, and seeing game animals killed or cleaned.

In the context of the AHP, these apprenticeship experiences will not necessarily be pre-hunting in nature. Prior to their involvement in the AHP, all apprentices will have passed a sportsmen's education course, and some will have purchased a hunting license and gone afield hunting. In essence, all apprentices already will be able to hunt legally. Youths in the program will

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8Pre-hunting means that the individuals accomplished these before they were legally licensed to hunt.
be provided with apprenticeship experiences concurrent to their legal participation in hunting activities.

In addition to providing hunting-related activities for youths, apprenticeship also involves the development of a mentoring relationship between each adult volunteer and his/her apprentice. Mentoring is a supportive, 1-on-1 relationship between the adult mentor and the youth apprentice which facilitates the youth's personal growth, especially as it relates to hunting (Anonymous 1991). Mentors will act as friend, teacher, and coach to the apprentices. In the context of the AHP, mentors will act as hunting role models for the apprentices. They will help the apprentice develop hunting skills and a sense of ethics with respect to hunting.

Social support is a more difficult concept to put into practice and evaluate. It is not as activity-oriented as the concept of apprenticeship, but relates more to the relationship between the youth with interest in hunting and the person(s) who influence development of that interest, initiate the youth into hunting, and accompany the youth afield (Purdy et al. 1985, Purdy and Decker 1986). Within the context of the AHP, social support has to do with the type of relationship that develops between the apprentice and the mentor, and how that relationship develops.

However, no definition of social support was concretely identified from the abstract notions described in Purdy et al. (1985) and Purdy and Decker (1986). One way to overcome this lack of a concrete definition is to describe a model of what the social support treatment is intended to do, and then to develop a set of questions that evaluates whether that has been achieved. Understanding and using the model is based on the recognition that youth generically face risks and opportunities for development of their ideas and
interests pertaining to any subject or situation. The specific situation of relevance to the AHP is described below.

Situation

All apprentices invited to participate in the AHP have a demonstrated interest in hunting. However, apprentices who come from families that do not value hunting highly (e.g., no family members hunt, no hunting materials or information exist at home, or hunting is not discussed in a positive manner) are at risk of not being able to pursue their interest in hunting.

The AHP is intended to reduce that risk and provide opportunity for development of the apprentice's interest in hunting. Success of the program depends in part on understanding the social environment in which the apprentice lives relative to hunting, and then enhancing that environment through the provision of apprenticeship and social support by trained, volunteer mentors.

Understanding the Apprentice’s Social Environment

A useful model for understanding the social environment was developed by Bronfenbrenner (1979) and further discussed by Garbarino (1982). This model consists of a set of different levels of systems. At the most basic level are the settings, or microsystems, in which an individual is an active participant. Examples of microsystems in which the apprentices may participate include the family home, school, and the hunting setting.⁹

⁹The hunting setting is broadly defined to include all locations and activities engaged in by the apprentice/mentor pair.
Mesosystems are the interfaces between 2 or more microsystems. For example, an important mesosystem with respect to the AHP is the interface between the apprentice’s family home setting and the hunting setting. Another is the connection between the apprentice’s same-age peer group and the hunting setting.

Exosystems involve circumstances that influence an apprentice’s development as a hunter, but in which the apprentice does not have an active role. For example, job-related obligations of the apprentice’s parents may prevent the parents from spending time hunting with the apprentice. Similarly, the fact that an apprentice lives in a single-parent family may limit his/her opportunities for hunting because that parent may be busy with other family obligations.

Finally, macrosystems are the "...broad ideological and institutional patterns of a particular culture or subculture" (Garbarino 1982:24). The suburbanization of America that occurred after World War II is an example of a macrosystem. It came about "...because of an intricate set of individual decisions, technological developments, and corporate and governmental initiatives" (Garbarino 1982:24). This suburbanization has had a great influence on whether 2 consecutive generations of youths have developed a similar interest in hunting and had similar opportunities to hunt.

Each successively higher-level system encompasses 1 or more examples of each of the lower-level systems. To identify ways of reducing the risk that the apprentice will be unable to fully develop their interest in hunting, we must identify the risks and opportunities within each level as well as among the different levels. The AHP, through the work of the mentors, is intended to influence 3 of the levels.
Microsystems

Every apprentice's life is made up of a number of microsystems or settings. Each setting has potential risks and opportunities relative to development of the youth's hunting interest. For example, most of the apprentices in the program come from home settings which put them at risk. They have few if any family members who hunt or are supportive of hunting. The AHP is intended to provide a microsystem (i.e., hunting setting) that provides opportunity for nurturing of the apprentice's hunting interest.

This can be accomplished by having the mentor establish a large, balanced, positive hunting setting. Individual mentors may be very enthusiastic and capable hunters, but more opportunity can be provided to the youth if the mentor involves several other enthusiastic, capable hunters in the activities conducted by the apprentice/mentor pair. A relatively large hunting microsystem (i.e., having numerous members) can provide a full, rich range of roles, activities, and relationships for the apprentice to use in his/her development as a hunter.

In addition, the hunting setting provided by the mentor will be most beneficial to the apprentice if there is a balance between what the mentor wants to do and what the apprentice wants to do. If the mentor is too authoritarian, the experiences will not be enjoyable for the apprentice and his/her development as a hunter will be frustrated. On the other hand, if the mentor is too permissive, the apprentice will have difficulty developing a sense of responsibility. A more balanced, reciprocal style of interaction will provide the most opportunity for development of the apprentice's hunting interest.
Finally, whether the mentor establishes a positive or negative hunting setting will determine the emotional climate in which the apprentice's development takes place. A positive climate will help develop self-confidence and competence in the apprentice. Support that preserves, respects, and reinforces the skills of the apprentice to cope in the world of hunting contribute to a positive climate (U.S. National Commission 1980). On the other hand, a negative climate will lead to discouragement and an inability to operate successfully in the hunting setting.

Such a large, balanced, positive hunting setting also is important because the apprentice may be very frustrated in their past attempts at developing their hunting interest. They may feel as though they are a failure because they have not been supported in their decision to become a hunter, or because they lack hunting knowledge and skills. Thus, there may be a stigma of failure attached to their participation in the AHP. Instead, their participation in the program must be recognized and communicated as a sign of strength rather than inadequacy (U.S. National Commission 1980).

Mesosystems

As stated above, mesosystems are the interfaces or connections between Microsystems. "The social richness of a child's mesosystem derives from the number and quality of these connections" (Garbarino 192:40). Risks to a youth's development as a hunter occur in the absence of connections between the hunting setting and other important settings, or when there is conflict between these settings.
A mesosystem is established when a person first enters a new microsystem. In the case of the AHP, it is when an apprentice first interacts with the hunting setting through the mentor. In most cases, the apprentice is the only link between his/her home setting and the hunting setting. The program is intended to strengthen that linkage and to diversify the number of linkages that exist between the home setting and the hunting setting. How this is accomplished and who is involved have a great bearing on whether the apprentice will continue to be at risk or experience opportunity.

If significant persons in both microsystems encourage the development of the mesosystem, the apprentice likely will experience a strong mesosystem. In the case of the AHP, parents or other family members from the home setting may hold attitudes relative to hunting that range from very positive to very negative. On the other hand, it is intended that the mentor will present only a very positive attitude about hunting. If the mentor can involve the apprentice's family members or close friends in program activities, those individuals may become more supportive of the youth's hunting interests. This will strengthen the mesosystem connection.

More positive connections between the hunting setting and other important settings will produce a greater likelihood that the linkage will help the apprentice develop his/her interest in hunting. "When the microsystems work in concert...the child benefits. When they work in isolation or in opposition, the child is at risk" (Garbarino 1982:40). To accomplish this, the mentor should work to encourage the apprentice's family to support the youth's decision to become a hunter.
Another important aspect of social support provided at the mesosystem level is that it should be adaptive to the changing needs of the apprentice (U.S. National Commission 1980). The number and types of connections made between the hunting setting and other important settings (e.g., apprentice’s home, school, peer group) will necessarily differ over the course of the program. Not all connections can or should be developed at once. Some connections (e.g., involvement of the apprentice’s same-age friends) may strengthen on their own after initial assistance from the mentor.

Exosystems

Garbarino (1982:42) describes the importance of the exosystem in this way.

The exosystem is a setting in which the child does not participate, but which has an effect on the child through the meso- and microsystems... Many of the most important exosystem risks to children fall within these two categories: a parent’s diminished ability to participate in the child’s microsystem, or people in institutional roles making decisions that adversely effect the child’s microsystem.

The AHP can help influence apprentices’ exosystems, and, by doing so, can provide additional opportunity for developing their interest in hunting. For example, an important exosystem affecting each apprentice is the occupation and work life of his/her parents. In many cases, the parents do not have the time or knowledge to take the apprentice hunting. The mentor’s role includes providing transportation, hunting knowledge, and companionship for the apprentice. In this way, the AHP is not intended to directly influence the exosystem that puts the apprentice at risk, but it can provide a surrogate exosystem.
Macrosystems

Risks to the development of an apprentice’s interest in hunting transcend the apprentice his/herself, the settings in which the apprentice participates, and the decisions made by parents and local institutions. Risks can be found in the "...heart of the culture and ... the ideology of the society in which a given family, and therefore a child lives" (Garbarino 1982:44). Many important influences on an apprentice’s development as a hunter come from political and social changes in society. These include societal attitudes about hunting, human/nature interactions, and animal rights.

Macrosystems underlie "... the organization of institutions, the assumptions people make about social relations, and the workings of the political and economic system" (Garbarino 1982:45). Because of this, providing opportunities to enhance development of anyone’s interest in hunting should necessarily be pursued at the macrosystem level. Changes in the macrosystem will indirectly, but profoundly, affect all lower levels of systems. However, the AHP is designed to be most influential at the microsystem and mesosystem levels, and only somewhat influential at the exosystem level. The program is not designed to impact the macrosystem level. Macrosystem changes would be best approached through broader policies.

Summary

Apprenticeship is intended to provide youth with the tools needed to become a hunter. This can be accomplished by providing various hunting-related activities within the context of a mentoring relationship:
• shooting a firearm;
• seeking information on hunting;
• eating wild game;
• accompanying others afield;
• sharing hunting stories; and
• seeing game animals killed or cleaned.

Social support is intended to help make the apprentice feel good about his/her decision to become a hunter. This can be accomplished by: (1) developing a large, balanced, and positive hunting setting in which the apprentice can participate, (2) developing strong, positive, adaptive linkages between the hunting setting and other settings important to the apprentice, and (3) helping to overcome parental time and hunting-knowledge constraints. In particular, the mentor has 2 important tasks:

• encourage positive social support for hunting to occur within social settings to which the youth already belongs (e.g., family setting, peer-group setting);
• build bridges between the apprentice and various social settings in which positive hunting support exists (e.g., hunting club settings, mentor’s peer-group setting).

Evaluation Questions

Based on the model presented above, the following evaluation questions were developed:

Apprenticeship

1. Did the mentor provide an opportunity for the apprentice to shoot a firearm? How many times? Did the apprentice do so?
2. Did the mentor provide an opportunity for the apprentice to seek information about hunting? How many times? Did the apprentice do so?

3. Did the mentor provide an opportunity for the apprentice to eat wild game? How many times? Did the apprentice do so?

4. Did the mentor take the apprentice hunting? How many times?

5. Did the mentor share hunting stories with the apprentice? How many times?

6. Did the mentor provide an opportunity for the apprentice to see game animals killed or cleaned? How many times? Did the apprentice kill or clean game?

7. Did the mentor help the apprentice develop hunting skills?

8. Did the mentor help the apprentice develop a sense of ethics relative to hunting?

Social Support

1. How many other hunters did the mentor personally introduce to the apprentice?

2. How many times did the pair participate in an activity that was the mentor's idea? How many times did the pair participate in an activity that was the apprentice's idea? In what other ways was the relationship balanced?

3. What did the mentor do to create a positive hunting setting?
4. Did the mentor involve the apprentice's family members in the activities of the pair? Same-age friends of the apprentice? Others? What was done to strengthen these linkages?

5. What was done to ensure that the interactions between the apprentice and the family, friends, etc. were positive with respect to hunting?

6. Was the mentor adaptive to different situations in terms of providing support? In what ways?

7. What did the mentor do for the apprentice relative to hunting that the apprentice's family did not have time to do?

Literature Cited


APPENDIX B

Necessary Characteristics
of Both Program Leaders and Volunteers

1. Good leadership skills (particularly personnel and time management), or access to training so these skills can be developed.

2. Ability to identify apprentices and mentors, especially walk-ins, before they have been screened.

3. Ability to work in a State bureaucracy.

4. Ability to "sell" program to potential apprentices, parents, NYSDEC staff, mentors, clubs, and others.

5. Good management skills (problem solving, directing, tracking, training, data entry).

6. Ability to organize events.

7. Ability to publicize the program (e.g., through media contacts, professional networks).

8. Good networking skills (e.g., ability to communicate with NYSDEC staff and external groups about the program).

9. Ability to communicate clearly in writing or by telephone to maintain contact with participants—youths, mentors, clubs.

10. Desire to meet frequently to understand program contexts (i.e., successes and failures), identify and prioritize failures, and develop strategies to resolve failures.

11. Ability to focus on the program and to not become distracted with other opportunities (e.g., deer check stations, creel censuses).
APPENDIX C
Specific Recommendations
Associated with each Implementation Stage

Recruiting and selecting mentors

- Use direct communication techniques such as targeted mailings/presentations and personal contacts.
- Use "Coalitions for Youth" and other grass-roots efforts to overcome geographic disparities in distributions of apprentices and mentors.
- Increase recruitment of husband/wife mentor teams.
- After recruiting and selecting mentors, train and pair them as soon as possible so their interest does not wane.

Screening and selecting potential apprentices

- Develop better communication and coordination between the AHP and SECs.
- Ensure all SEC graduates are screened by formally linking SEC exam forms and AHP screening instruments.
- Develop more restrictive criteria for selecting youths to be invited to participate in the AHP by improving the indicator of previous apprenticeship experience used in the screening instrument.
- Use "Coalitions for Youth" and other grass-roots efforts to identify potential apprentices who do not attend SECs or who are not made aware of the AHP through SECs.
- Screen all youths who are identified through mechanisms other than SECs to determine whether they meet criteria for participating in the AHP.

Training mentors

- Train mentors as soon after recruitment as possible.
- Increase the duration of training workshops to at least 1 full day to allow more meaningful training.
- Hire professional trainers to conduct the workshops.
- Incorporate into the workshops sharing of successful experiences by paired mentors and apprentices to help trainees better understand the concepts of apprenticeship and social support, and how these concepts can be put into everyday practice.

- Incorporate into the workshops role playing and other experiential techniques.

- Integrate AHP training workshops with training workshops for other NYSDEC-sponsored programs such as SECs and SAREP.

Inviting apprentices

- Use trained volunteers to extend invitations via telephone to potential apprentices in a timely manner after they have been screened.

- Revise the official AHP brochure to address several inconsistencies and/or false statements.

- Develop a realistic timetable for inviting apprentices to participate that takes into account possible changes in the timing of when SECs are offered as well as possible changes in timing of other implementation efforts.

Pairing apprentices and mentors

- Use group meetings as much as possible as the pairing mechanism.

- Use volunteers to perform much of the necessary and frequent communication with mentors, apprentices, and apprentice’s parents.

- More fully evaluate the merits of pairing mentors with more than 1 apprentice at a time.

Communicating with mentors

- Use trained volunteers to perform much of the necessary and frequent communication with mentors.

- Use the "Fish and Wildlife Coalition for Youth" in the southeastern area as a communication mechanism, and encourage the emergence of a similar coalition in the west-central area.

- Use field days and picnics targeted specifically at AHP participants as a communication mechanism, and hold these events either just prior to or just after the hunting seasons.
Ensuring and monitoring subsequent contacts between mentors and apprentices

- Provide more opportunities for mentors and apprentices from successful pairs to share insights about apprenticeship and social support at mentor training workshops.

- Determine and address the causes of apprentice drop-out and need for rematching.

- Use unpaired mentors before soliciting additional volunteers.

- Use "Coalitions for Youth" and other grass-roots efforts to identify additional youths who meet criteria to participate in the AHP and who can be matched with unpaired mentors.

- If geographic disparity cannot be resolved in other ways, pair multiple mentors with an apprentice or multiple apprentices with a mentor.

Ending the mentoring process

- Officially recognize and provide a completion ceremony for all pairs who have been matched for ≥1 year.

- Establish a regular schedule of completion ceremonies corresponding roughly to the 1-year anniversary of each pair’s matching.


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